



Exchange/Sale of Eligible Inventory

Russell S. Salley

Kaitlyn C. Commes

Ian P. Lahmann

John A. Stephenson

NOTICE:

THE VIEWS, OPINIONS, AND FINDINGS CONTAINED IN THIS REPORT ARE THOSE OF LMI AND SHOULD NOT BE CONSTRUED AS AN OFFICIAL AGENCY POSITION, POLICY, OR DECISION, UNLESS SO DESIGNATED BY OTHER OFFICIAL DOCUMENTATION.

LMI ©2019. ALL RIGHTS RESERVED. 11064.017.00L1

Exchange/Sale of Eligible Inventory

June 2019

Executive Summary

The federal government rarely sells or exchanges material for similar items to manage inventory. The concept of incorporating this capability was presented to the Defense Logistics Agency (DLA) leadership by a third party in 2013, and DLA decided to explore the capability in a two-phase effort under the DLA Research and Development Program. The two-phase effort derived the authority to exchange or sell similar items from *40 U.S.C. 503, "Exchange or sale of similar items"* and guidance on implementing the capability from the Federal Management Regulation Part 102-39. Each phase was to determine if implementing an exchange/sale program within DLA provided a new inventory management capability that contributed to DLA's primary mission of warfighter support with accountability.

Phase 1, entitled "Exchange/Sale of Economic Retention Stock," was completed in October 2015. The Phase 1 pilot sold economic retention stock (ERS) at a 3.6 percent return on the value of the inventory. While small, this exceeded the return of 1.8 percent that was expected from processing the materiel through the existing disposition contract. However, the manual effort to execute the sale was extremely burdensome in labor hours and documentation of non-standard processes, so DLA decided to take a strategic pause before beginning Phase 2.

Originally, Phase 2 involved exchanging materiel for similar items directly rather than selling it to fund future procurement. Sale and exchange are both allowed under the statute and regulation, as long as the materiel purchased or received is similar to what was sold or exchanged. During the planning of Phase 2, DLA J34 stated that there was no longer interest in creating an exchange program. Instead, DLA J34 wanted to focus on automating a sales program and the associated business rules, processes, practices, and economic returns.

Since the end of Phase 1, the disposition return rates have increased to 4.25–5.85 percent and auditability has become more important, significantly affecting the results of Phase 2. The bottom line is that an exchange/sale program does not meet DLA financial or auditability goals at this time.

Approximately 10 percent of DLA inventory is comprised of ERS. ERS is stock in quantities above Approved Acquisition Objective (i.e., current requirements), but is more economical to retain than to dispose of and then potentially repurchase. This definition and the identification and designation of materiel as ERS is based upon a stratification process found in Department of Defense Manual 4140.01, Volume 6, "DoD Supply Chain Materiel Management Procedures: Materiel Returns, Retention and Disposition,"

and Volume 10, “DoD Supply Chain Materiel Management Procedures: Supply Chain Inventory Reporting and Metrics.”

Our findings show executing this program could actually cost DLA money on many if not most sales. While the returns on any individual item are driven by the commercial market at the time of the sale, there are meaningful estimates of the return based on market research. The costs of performing the required pick, pack, segregation, consolidation, and transportation are such that these costs alone could easily result in a negative economic return compared to the value of the sale. In addition to these operational costs, capability requirements are necessary to automate the transactions and increase the auditability. These costs further undermine the economics of this program.

Even with automation, there are concerns around the auditability and defensibility of an exchange/sale program. Although such a program is fully legal and authorized, there will be questions around valuation of the inventory, documentation, and system adjustments to reflect changes in standard prices, among a host of potential questions.

There are two circumstances that may support the creation of an exchange/sale program. First, if DLA makes any effort to substantially decrease overall inventory levels, an exchange/sale program would provide a new method to reduce inventory. The benefit under this scenario is not financial, the operational costs remain, but in providing an additional method for reducing inventory beyond disposition. Second, an exchange/sale program would help reduce the inventory footprint within its facilities, freeing space for other uses such as additive manufacturing or product testing. Even in these scenarios, it will still be difficult to mitigate potential audit concerns and a perception of inadequate financial stewardship.

If DLA decides to pursue an exchange/sale program, LMI has created process flow documents (see Appendix A) and capability requests that can serve as the basis for the development of the program.

Contents

Chapter 1 Introduction	1-1
Background	1-1
Exchange/Sale of Eligible Inventory Project.....	1-2
Chapter 2 Findings	2-1
Overview	2-1
Authorities	2-1
<i>40 U.S.C. Section 503—Exchange or Sale of Similar Items</i>	2-1
Federal Management Regulation	2-1
DoD Manual 4140.01	2-1
Authority Considerations	2-2
Materiel Selection and Economic Returns	2-2
Item Selection	2-2
Set of Exchange/Sale Candidates.....	2-3
Historical Analysis of Materiel Type and Quantity.....	2-4
Program Costs and Returns	2-9
Annual Cost Estimates.....	2-9
Net Revenue Analysis.....	2-9
Transactional Processes.....	2-10
Financial Processes and Transactions.....	2-10
Order Management Processes and Transactions	2-11
Distribution/Inventory Processes and Transactions.....	2-11
Auditability	2-11
Chapter 3 Recommendations	3-1
Overview	3-1
Authorities	3-1
Processes and Transactions.....	3-2
Incorporate Process to Identify Items.....	3-2
Order Management Process	3-2
Financial Process.....	3-3
Distribution/Transportation Process	3-3

Auditability	3-4
General Lessons Learned from ESEI.....	3-4
Appendix A Process Flows	
Appendix B Estimated Return Percentages	
Appendix C Lessons Learned from ESERS	
Appendix D Abbreviations	
Figures	
Figure 2-1. Value Distribution by FSG.....	2-5
Figure-2-2. Historical Eligible Inventory Quantities.....	2-6
Figure 2-3. Historical Eligible Inventory Values	2-6
Figure 2-4. Historical Cumulative Return Estimates, Method 1	2-8
Figure 2-5. Historical Cumulative Return Estimates, Method 2	2-8
Figure 2-6. Annual Net Revenue Estimates	2-10

Chapter 1

Introduction

Background

In 2013, the concept of incorporating the sale or exchange of items into the Defense Logistics Agency's (DLA's) inventory management capabilities was presented to leadership. The DLA Research and Development (R&D) Program was assigned to determine if the implementation and execution of this capability was possible. The two-phase effort derived the authority to exchange or sell similar items from *40 U.S.C. 503, "Exchange or sale of similar items"* and guidance on implementing the capability from the Federal Management Regulation (FMR) Part 102-39. Each phase was to determine if implementing an exchange/sale program within DLA provided a new inventory management capability that contributed to DLA's primary mission of warfighter support with accountability.

Phase 1, entitled "Exchange/Sale of Economic Retention Stock," (ESERS) was completed in October 2015. The Phase 1 pilot sold economic retention stock (ERS) at a 3.6 percent return on the value of the inventory. While small, this exceeded the return of 1.8 percent that was expected from processing the materiel through the existing disposition contract. However, the manual effort to execute the sale was extremely burdensome in labor hours and documentation of non-standard processes, so DLA decided to take a strategic pause to reassess before commencing this effort with Phase 2, entitled "Exchange/Sale of Eligible Inventory" (ESEI).

Originally, Phase 2 involved exchanging materiel for similar items directly rather than selling it to fund future procurement. Sale and exchange are both allowed under the statute and regulation, as long as the materiel purchased or received is similar to what was sold or exchanged. During the development of the plan for Phase 2, DLA stated that it was no longer interested in creating an exchange program. Instead, DLA wanted to focus on automating a sales program and the associated business rules, processes, practices, and economic returns.

When DLA acquires inventory above immediate need, it adds storage costs (labor and infrastructure), uses warehouse space (precluding use for other purposes), risks loss and obsolescence, and increases audit and stewardship concerns. DLA generally ensures inventory viability via disposition, retention, or new procurement:

- **Disposition:** Inventory is declared excess/surplus and processed through DLA Disposition Services which screens materiel and then offers it for reutilization, transfer, or donation using established processes and procedures. These proceeds return to Disposition Services to offset the cost of the program.
- **Retention:** Inventory is retained against the possibility of future use. Economically this makes sense, as DLA's marginal cost of holding materiel is generally very low compared to the costs incurred to re-procure parts. However, this does not mitigate concerns of space, loss, obsolescence or audit and stewardship.

-
- **New Procurement:** As the Services' missions change, the parts support changes as well. Despite DLA's efforts to improve forecasting, the length of time it takes to procure new items coupled with the changing missions creates an environment susceptible to over procurement.

The ESERS project evaluated whether selling or exchanging ERSs was a viable fourth method of ensuring inventory viability. The project's primary objectives included the following:

- Generate a higher return than the 1.8 percent returns from traditional disposal methods for similar items
- Use the allowances from the initial exchange to acquire similar materiel for operational needs
- Remove inventory from the books and DLA warehouses
- Generate additional revenue from DLA's share of the profit of the subsequent resale of the materiel
- Retain the ability to buy back materiel at a reduced cost.

To validate the objectives, DLA conducted a pilot using the General Services Administration (GSA) auction site (<https://gsaauctions.gov/gsaauctions/gsaauctions/>). GSA did not agree to help DLA generate revenue or retain buy back ability during the pilot because those capabilities are outside of the scope of the normal exchange/sale process.

The pilot did sell materiel, generating a net 3.6 percent of the value of the inventory, twice the 1.8 percent of inventory value available from Disposition Services. However, the significant amount of manual intervention precluded this process from being sustainable on any scale.

Exchange/Sale of Eligible Inventory Project

In August 2017, DLA sought to continue with Phase 2 of the project and conduct a pilot using exchange, rather than sales options. All those tasked to execute the pilot considered it an overwhelming burden because of their existing workloads and the lack of urgency to reduce inventory. Rather than proceed, DLA decided to consider automating the sale of materiel to evaluate the business rules, processes, practices, economic returns, and viability of such a program.

In February 2019, a DLA integrated process team (IPT) was formed and tasked to develop requirements, collect data, and evaluate the possibility of creating a new sale of ERS program within DLA.

LMI engaged as a partner with the IPT and performed analysis of existing policies, processes, and systems to develop a recommendation on whether to proceed. LMI was also engaged to identify and create supporting documentation, including capability requests, for the notional program.

This report details those findings and recommendations.

Chapter 2

Findings

Overview

This chapter provides details on the data, information, and analysis relevant to the subsequent recommendations. Because this project was a continuation of the Phase 1 ESERS project, the lessons learned in Phase 1 provided a foundation upon which to build. These findings are presented in the following sections:

- Authorities
- Materiel Selection and Economic Returns
- Processes and Transactions
- Auditability.

Authorities

LMI reviewed and analyzed existing authorities to sell materiel and retain and utilize the proceeds under the exchange/sale program.

40 U.S.C. Section 503—Exchange or Sale of Similar Items

40 U.S.C. Section 503 is the statutory authority allowing the exchange or sale of similar items. Sub-section (a), Authority of Executive Agencies, states:

In acquiring personal property, an executive agency may exchange or sell similar items and may apply the exchange allowance or proceeds of sale in whole or in part payment for the property acquired.

Utilizing this authority, DLA may implement and execute an exchange/sale capability. The regulations and guidance pertaining to the exchange/sale of similar items by executive agencies are derived from this statute.

Federal Management Regulation

The implementing regulation is the FMR Part 102-39—Replacement of Personal Property Pursuant to the Exchange/Sale Authority. The regulation contains provisions related to the exchange/sale of personal property that specify terms and definitions, exchange/sale considerations, conditions and restrictions to using the exchange/sale authority, and exchange/sale accounting and reporting requirements.

DoD Manual 4140.01

DLA's decision to focus on ERS involves Department of Defense (DoD) Manual 4140.01, Volume 6, "DoD Supply Chain Materiel Management Procedures: Materiel Returns, Retention and Disposition," and DoD Manual 4140.01, Volume 10, "DoD Supply Chain Materiel Management Procedures: Supply Chain Inventory Reporting and

Metrics.” These volumes provide the definition of what constitutes ERS and how it is stratified within the overall DoD inventory categories:

- Approved Acquisition Objective (AAO)—the quantity of an item authorized for peace time and war time requirements to equip and sustain U.S. and allied forces
- Contingency Retention Stock (CRS)—stock above an item’s AAO requirements and ERS limit, if a level of stock has been established, that is held to support specific contingencies
- ERS—stock above AAO that is more economical to retain than to dispose of and then potentially repurchase
- Potential Reutilization Stock (PRS)—stock above the sum of AAO, the ERS, and the CRS that is under review for transfer to DLA Disposition Services.

Authority Considerations

There are no questions as to the legality and authority to establish and conduct an Exchange/Sale program. DLA General Counsel presented a briefing to the DLA IPT on April 3, 2019, validating the legal authorities.

The primary concern expressed by DLA Finance concerns the requirement that any proceeds from the sale of the materiel must be used to procure “similar items.” The concern is that this may constitute an obligation authority. In the FMR, acquired and replaced items are considered similar only if they

- are identical,
- fall within a single Federal Supply Class Group,
- are parts or containers for similar end items, or
- are designed or constructed for the same purpose.

Materiel Selection and Economic Returns

Item Selection

Use of exchange/sale as an inventory management capability is appropriate for certain, but not all commodities. It is most useful for larger assemblies, repair parts for commercial products and equipment, or other items with a significant and consistent market. Non-commercial materiel and piece parts, however, are likely to have insubstantial and highly variable demand. Automobile, forklift, or conveyor parts would serve as good candidates for exchange/sale, whereas nuts, bolts, gaskets, screws and nails would have limited viability. Market potential is an important consideration when setting the selection criteria.

Market surveys from Phase 1 of the ESERS project identified basic characteristics of good exchange/sale candidates:

- In use commercially
- Not military unique or specific
- Not piece parts.

ERS candidate materiel must be narrowed in accordance with existing federal and DoD authorities:

- FMR 102-39 provides clear prohibitions in item selection. In summary, it narrows eligible materiel to demilitarized, non-scrap items for which acquisition of replacement materiel would not be restricted. It also specifically prohibits Federal Supply Groups (FSGs) for safety equipment, individual clothing or equipment, chemicals, and prefabricated structures.
- DoD 4140.01-V6 dictates the assessment criteria for stratifying materiel and determining Economic Retention Limit (ERL). It also requires that, for materiel designated suitable to support contingencies, stock levels beyond both AAO requirements and ERLs be identified as CRS. Materiel with CRS requirements or exceptions would not be suitable candidates for exchange/sale.

Processes associated with item selection already occur within the J34 Planning Office (see Appendix A). The selection criterion drives the queries that produce the list of available items. After the initial list is generated, additional considerations can further limit the list of items based on considerations such as the current market potential, new forecasts for demand or inventory levels, ease of distribution, and risk.

- Shelf life items may be excluded to eliminate additional labor required to track and communicate remaining shelf life
- Items may be restricted to those that are commercial off-the-shelf (COTS) and above a minimum moving average price (MAP) value, to increase the likelihood that they are of sufficient interest and value to prospective buyers
- Qualified items may be restricted to particular distribution centers to simplify logistics
- DLA Supply Chains determined significant risk is associated with items that have long procurement lead times, no known source of supply, a single acquisition source, or frequent or high annual demand.

Set of Exchange/Sale Candidates

Inventory stratification data from DLA's Enterprise Data Warehouse revealed an initial pool of 325,381 unique National Item Identification Numbers (NIINs) stored as ERS as of February 2019. The criteria outlined in the Item Selection section were used to develop the following query and produce the set of stocked materiel suitable for exchange/sale:

- ERS available
- No on-hand PRS
- No CRS requirements
- Demilitarization codes A and Q6 only
- No first article testing (FAT), life-saving equipment (LSE), or flight safety indicator (FSI) items
- COTS items only
- No finite shelf life items
- Only NIINs with over 75 percent of on-hand assets stocked at Defense Depot Susquehanna, Pennsylvania (DDSP) or Defense Distribution Depot San Joaquin, California (DDJC)
- MAP of \$50 or greater
- No sole-source items

-
- No items with acquisition advice code X
 - Procurement lead time less than 300 days
 - Annual demand frequency less than 10.

The query narrowed the initial set to a group of 288 eligible NIINs, less than 0.1 percent of all distinct item numbers in ERS. This group consisted of 1,950 individual items with a total value of \$739,486, as derived from on-hand quantities and MAP. It is important to note that this total value figure does not represent a feasible return from exchange/sale of the stock. Potential return estimates are discussed in section titled, “Anticipated Returns Using Historical Data” below.

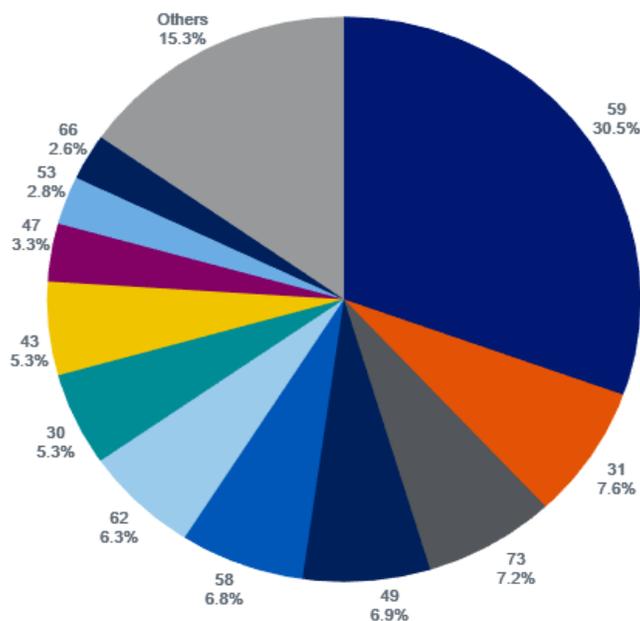
Historical Analysis of Materiel Type and Quantity

Analysis of previous inventory stratification data provides insight into the variation and trends of stock available for exchange/sale over time. Historical analysis for this project concentrated on 12 months’ worth of stratification data, between February 2018 and February 2019. DLA’s inventory stratification was updated and recorded each month, with the exception of August 2018, for which no stratification data is available.

Materiel Classification

In Phase 1 of the ESERS project, exchange/sale stock was sold as a single lot (buy all or none) of materiel. Among other suggestions, buyers noted that they would be significantly more interested in purchasing stock if it were segmented and grouped by commodity type. In addition to increasing interest and likelihood of transaction, grouping materiel may allow DLA to capture higher overall sale returns by separating item classifications with high and low market potential.

Eligible inventory varies in supply classification, spanning across 76 different Federal Supply Codes (FSCs). The FSG with the highest value materiel for the analysis period was Electrical and Electronic Equipment Components (FSG 59), by a significant margin. Other high value FSGs of interest include Bearings (FSG 31), Food Preparation and Serving Equipment (FSG 73), and Maintenance and Repair Shop Equipment (FSG 49). Figure 2-1 illustrates the distribution of aggregated stock value by FSG. FSG and FSC classifications may be used to group materiel into separate lots and increase the materiel’s market viability and returns, but with a subsequent increase in labor costs to conduct the segregation.

Figure 2-1. Value Distribution by FSG

FSG	Nomenclature
59	Electrical and Electronic Equipment Components
31	Bearings
73	Food Preparation and Serving Equipment
49	Maintenance and Repair Shop Equipment
58	Communication, Detection, and Coherent Radiation Equipment
62	Lighting Fixtures and Lamps
30	Mechanical Power Transmission Equipment
43	Pumps and Compressors
47	Pipe, Tubing, Hose, and Fittings
53	Hardware and Abrasives
66	Instruments and Laboratory Equipment

Variations in Value and Quantity

Total stock on-hand levels for ERS items of interest remained reasonably consistent over the 12-month period. The stock had an average total quantity of 2,170 items and did not deviate from this average by more than 300 items in any given month. This is to be expected, as many of the items are characterized by very low or decreasing annual demand quantity (ADQ), and a relatively high ERL compared with these demand quantities. Eligible stock is both slow to accumulate and slow to exit, whether through disposition processes or other means.

The average total value of the stock was \$655,793, deviating from this average by \$110,000 at most in any given month. While trends in value generally follow trends in

quantity, some variation can be attributed to differences in the group of NIINs that meet query criteria over time. Figure-2-2 and Figure 2-3 illustrate the historical trends of eligible inventory quantities and values respectively.

Figure-2-2. Historical Eligible Inventory Quantities

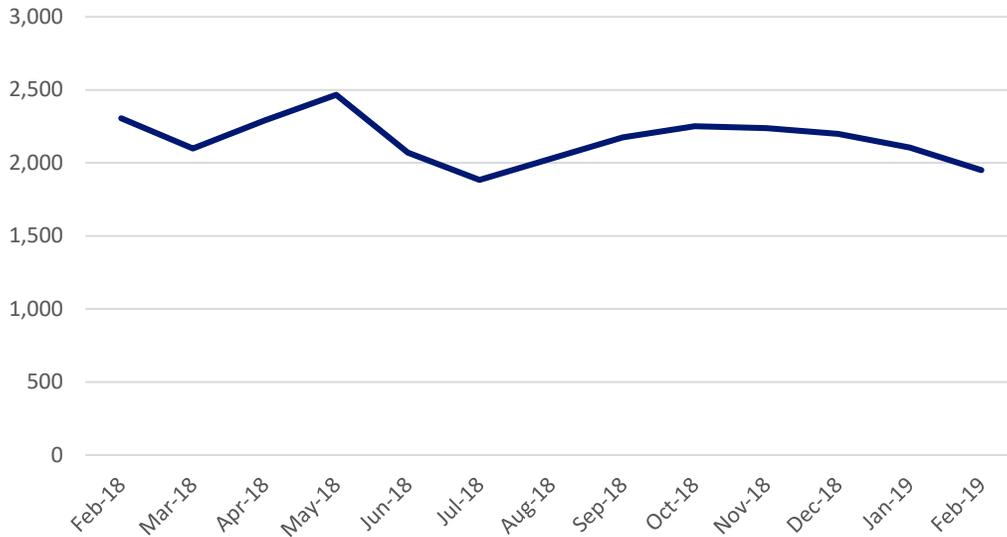
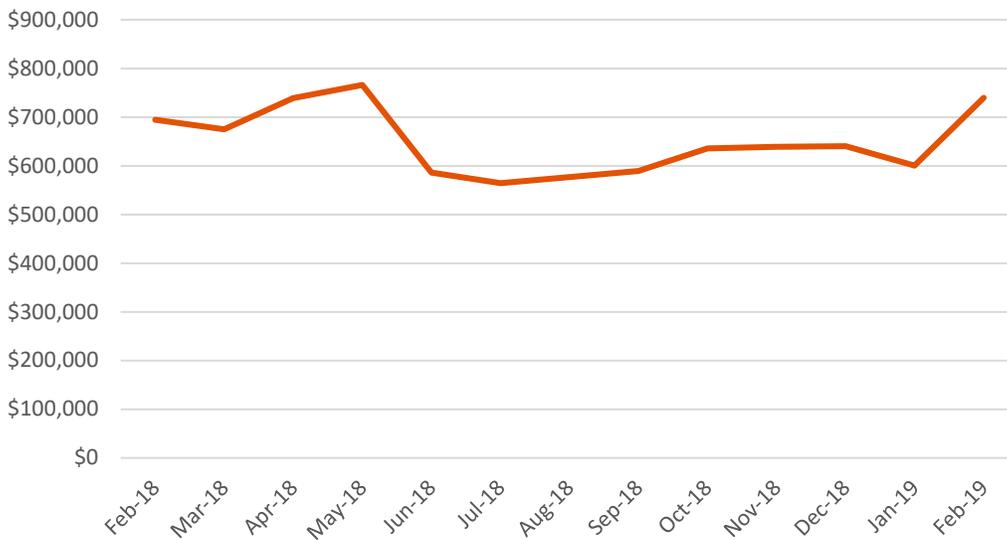


Figure 2-3. Historical Eligible Inventory Values



Return on Materiel

As noted in the Item Selection section, the return is dependent on the actual item and the current market. Certain items have consistent markets (repair parts for commercial items), while others (nuts and bolts) have virtually no market. The market at the time of exchange or sale can vary widely, based on conditions commonly found in the

commercial marketplace. For example, natural disasters create markets for comfort and emergency supplies that exceed the norm.

In general, larger end use items (forklifts, vehicles) may return up to 40 percent of value. Smaller, but still widely acceptable items (transmissions) will likely return 10 to 20 percent of their value. Items with little to no market will return 5 percent or less, which is commensurate with the DLA disposal return average of 5 percent.

Anticipated Returns Using Historical Data

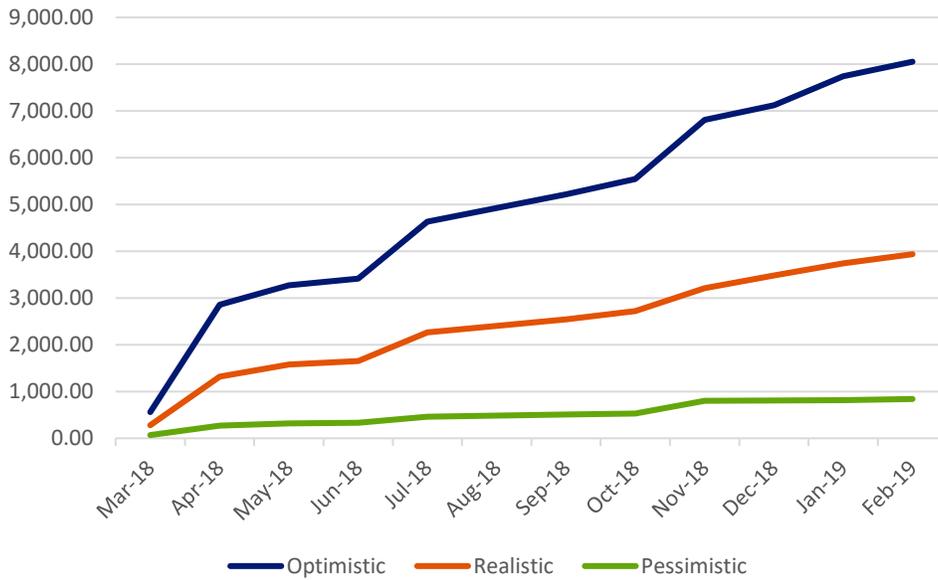
In order to predict potential ESEI returns, LMI employed two distinct methods to determine the quantity of ERS stock on hand available for sale. The first method assumes that stock will be able to be sold down to half of the ERL, while the second assumes that stock will be able to be sold down to the expected 5-year demand quantity.

In both methods of analysis, the considerations listed in the Return on Materiel section and market insights from Phase 1 of the ESERS project were used to gauge varying rates of return based on materiel type and classification. LMI estimated optimistic, realistic, and pessimistic rates of return based on FSC. For example, FSC 6220, Electrical Vehicle Lights and Fixtures, has estimated optimistic, realistic, and pessimistic returns of 20 percent, 10 percent, and 2 percent respectively. In contrast, an FSC with lower market potential such as FSC 3120, Plain Unmounted Bearings, has estimated optimistic, realistic, and pessimistic returns of 5 percent, 2 percent, and 1 percent respectively. Appendix B provides a chart of percent return estimates.

Method 1: Selling to Half of the Economic Retention Limit

The ERL for any given item is the maximum amount of stock that would be economically beneficial to be kept as ERS. Stock levels beyond the ERL become apparent excess and are sent for disposal. Method 1 assumes that an exchange/sale program would be able to facilitate sufficient demand and transactions to reduce eligible inventory stock on hand to half of the ERL for each item. Considering the low ADQs for eligible inventory overall, this assumption drives a conservative analysis of potential returns. Figure 2-4 illustrates the cumulative return estimates using Method 1, with total annual cumulative returns of \$8,053, \$3,937, and \$840 for optimistic, realistic, and pessimistic estimates respectively.

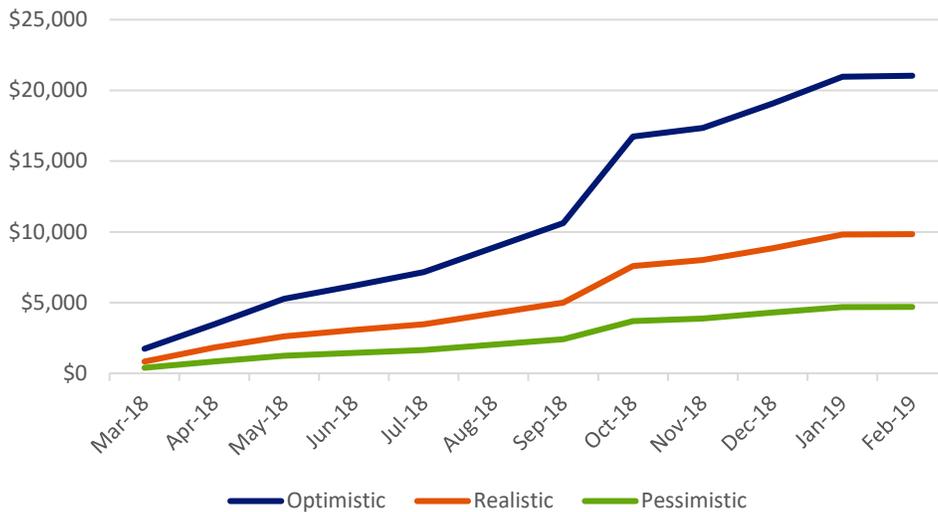
Figure 2-4. Historical Cumulative Return Estimates, Method 1



Method 2: Selling to Anticipated 5-Year Demand

The ADQ for an item is a record of previous annual demand. Good exchange/sale candidates typically have a history of very low or decreasing annual demand. Method 2 assumes that inventory will be successfully sold down to the total demand anticipated for an item over a 5-year period. This total demand amount is estimated using each item's average ADQ over the previous 5 years, multiplied by five. This assumption drives a more optimistic analysis than Method 1. Figure 2-5 illustrates the cumulative return estimates using Method 2, with total annual cumulative returns of \$21,036, \$9,836, and \$4,693 for optimistic, realistic, and pessimistic estimates respectively.

Figure 2-5. Historical Cumulative Return Estimates, Method 2



Program Costs and Returns

Annual Cost Estimates

Recurring program cost estimates are derived from two significant sources: labor rates for item packing and transport and transaction facilitation fees from GSA. These costs can be highly variable depending on item and buyer characteristics. To determine net revenues, a range of optimistic, realistic, and pessimistic values were used.

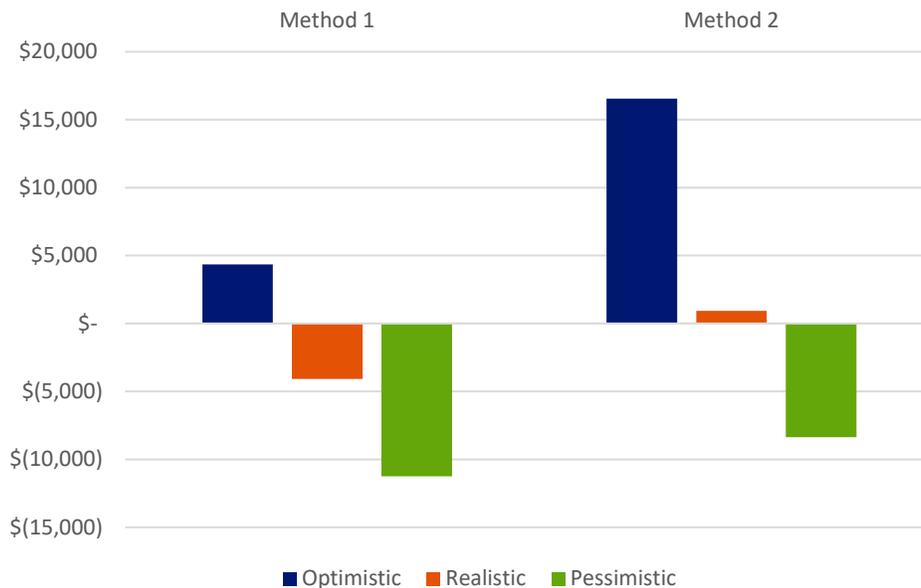
- Item packing and transport cost estimates are derived from DLA Distribution net landed cost rates for FY19. Each individual NIIN would carry a base charge of \$24.45, with an additional weight charge.
 - Optimistic estimates assume a weight charge of \$2.78 for each item (for 1 lb. to 40 lbs. range), amounting to a total cost of \$3,213.
 - Realistic estimates assume a weight charge of \$38.51 for each item (for 41 lbs. to 150 lbs. range), amounting to a total cost of \$7,429.
 - Pessimistic estimates assume a weight charge of \$76.25 for each item (for 151 lbs. to 2,000 lbs. range), amounting to a total cost of \$11,883.
- GSA fees are taken as a percentage of transaction returns. From findings in Phase 1 of ESERS, these percentages may range from 6 to 25 percent.
 - Optimistic estimates assume a 6 percent subtraction from optimistic returns as determined in Anticipated Returns Using Historical Data.
 - Realistic estimates assume a 15 percent subtraction from realistic returns as determined in Anticipated Returns Using Historical Data.
 - Pessimistic estimates assume a 25 percent subtraction from pessimistic returns as determined in Anticipated Returns Using Historical Data.

Net Revenue Analysis

LMI determined net revenue estimates by merging the historical cumulative returns for each sale assumption method with the anticipated annual labor costs and GSA transaction fees.

Overall, the annual net revenues predicted from historical data for ESEI are very low, and potentially negative. The realistic and pessimistic net revenues calculated for Method 1 are both negative: net losses of \$4,083 and \$11,252 respectively. The pessimistic revenue expected for Method 2 is a net loss of \$8,363. The optimistic annual net revenue for Method 1 is a gain of \$4,357, while the optimistic and realistic values for Method 2 are gains of \$16,560 and \$932 respectively. Figure 2-6 illustrates the optimistic, realistic, and pessimistic annual net revenue estimates for Method 1 (half of the ERL) and Method 2 (5-year anticipated demand) sale assumptions.

Figure 2-6. Annual Net Revenue Estimates



Even with modification to the Economic Retention modifiers there was no appreciable difference in the returns. The increased rate of return with the new disposition contracts further lessens the impact. The bottom line remains that the sale of ERS economic returns is potentially costly regardless of the quantities of stock available.

Transactional Processes

Financial Processes and Transactions

One primary concern for this project was to ensure auditability and accountability were maintained. The financial transactions associated with exchange/sale are similar to other DLA financial transactions, and therefore supported by existing transaction sets. However, operational/business decisions and their execution may require different financial transactions. Once these decisions are made, the financial process can be more specifically defined.

Additionally, new rules governing intragovernmental order processes are set to be implemented within DLA with a full system implementation scheduled for October 1, 2020. G-invoicing, a Department of Treasury owned system, will replace the current system and change the associated processes. As part of this process, over 3,000 new agreements must be put into place. This workload encompasses not only financial personnel, but also major subordinate command commanders, J/D code directors, and legal personnel.

Even without the introduction of G-invoicing, two major points must be addressed. First, DLA and GSA will need to address how the fees for using the GSA auction site will be paid. GSA requires an obligation for the estimated fees in an upfront transaction. Under standard procedures, DLA does not pay or provide obligations until a service has been provided. Second, DLA will need to codify when to transfer the title of the goods exchanged, either at the time of sale or at the time of receipt. The impact within the

financial transactions is two-fold. First, from an accountability of materiel perspective, the ownership of the materiel determines the timing of the transaction. Second, if the materiel must be transported to the recipient, the charges for the movement must also be included.

Order Management Processes and Transactions

The Order Management transactions are equally important to meeting the Financial Improvement and Audit Readiness requirements. The ability to account for materiel is key. However, in many ways the Order Management transactions are more complicated than Financial transactions because they must describe not only the item and quantity, but also identify customers that are outside of the normal operations for DLA and its distribution activities.

While the item selection efforts should take into consideration the inventory levels, Order Management must determine how to code those items for identification within the DLA inventory system. That is, even after an item is identified for exchange/sale will it still be available for issue to fulfill customer orders? If so, for how long and under what conditions? The timeline involved in exchange/sale and the dynamic demand from DLA customers makes this a necessary decision to make for each item.

Distribution/Inventory Processes and Transactions

DLA Distribution issues materiel under a number of different scenarios with multiple fulfillment lanes. Key for the exchange/sale process is how to identify these issues, establish distribution lanes (most likely outside of normal lanes), and process the shipments and transportation to non-traditional recipients. The complexity of these transactions and operations is substantial and the decisions on how each exchange/sale is to be made requires multiple options for fulfillment activities.

Auditability

An overarching concern over auditability was a consistent factor across each of the functional areas within DLA. The Office of Management and Budget, Government Accountability Office, and Federal Accounting Standards Advisory Board (FASAB) each require standards be documented and incorporated throughout to support the documentation, internal controls, and processes of the exchange/sale program. To accurately account for finances, inventory, and documentation, the following areas are of particular concern:

- Item Selection
 - Criteria for item selection should be clearly documented
 - Any variances and the reasoning behind the variance to the selection criteria should be approved and documented, and should include the reasoning behind the decision to diverge from the documented criteria
 - Procedures should be in place and documented for the review and approval of item selection.
- Valuation
 - Valuation criteria to determine the sale price of an item should be clearly documented

-
- Any variances and the reasoning behind the variance to the valuation criteria should be approved and documented, and should include the reasoning behind the decision to diverge from the documented criteria
 - Methods must be developed for ERS inventory that ensure estimated costs completion, holding, and disposal are complete and accurate; ensure estimated recoveries from sale of materiel are documented and supported by evidential matter (EM); and ensure calculations are completed in accordance with the FMR.
 - Inventory Accuracy
 - Processes that verify and ensure the inventory count for the item being sold is accurate prior to sale should be documented and implemented.
 - Financial Transactions
 - Transactions must be properly recorded and accounted for to permit the preparation of reliable financial statements and federal reports
 - Transactions must be executed in compliance with any applicable laws, regulations, standards, and provisions of contracts (e.g., general accepted accounting principles and FASAB).
 - Asset Management:
 - Internal controls must be developed and implemented to ensure funds, property, and other assets are safeguarded against loss from unauthorized use or disposition
 - EM to support shipping terms for sales transactions and evidence when the title and risk of loss is transferred to the buyer (i.e., Freight on Board [FOB] Origin or Destination) must be documented.

Many DLA processes and systems are already established for similar capabilities. If DLA chooses to modify these processes and systems, DLA must ensure the processes and systems and the new modifications being utilized for the new capability to meet the required federal audit standards and requirements.

Chapter 3

Recommendations

Overview

The current DLA climate as it relates to inventory management does not support the creation and use of the exchange/sale capability as a means of inventory management. During our interviews in March of 2019, GSA representatives noted:

While the Exchange/Sale authorities exist, and are used regularly, this is not a capability usually applied to inventory held for issue. There is no restriction on this use, but in practice the Exchange/Sale provisions are usually applied to items and inventory items that are no longer required by end users.

However, when reducing inventory is of very high priority and visibility, establishing an exchange/sale capability does provide DLA an additional capability to reduce inventory. In these instances, any capability to diminish the quantities of on-hand materiel may be employed. Unless the volume and costs of the materiel are substantial, the use of this capability would likely be reserved as a last resort to meet directed inventory reduction.

If DLA determines that this capability would be valuable for future inventory reduction efforts, LMI has identified recommendations for the necessary changes to policies, guidance, processes, and systems. These changes would need to be put into place to proceed with implementing and executing the exchange/sale capability as a method of inventory management.

Authorities

Authority to execute an exchange/sale capability throughout DLA was given with the signing of *40 U.S.C. Section 503*. Subsequent regulations provided some clarity surrounding the execution (e.g., criteria, accounting, reporting) of an exchange/sale of items. For DLA's purpose of utilizing this capability, a central policy and additional instructions or standard operating procedures (SOPs) at a more granular level, specific to DLA, are needed. DLA should develop a central policy and internal instructions or SOPs pertaining to the execution of the exchange/sale capability. The policies or SOPs should cover the areas of Finance, Logistics, and Contracts, though other areas may be worth including. Having the proper documented policies and procedures provide personnel clear guidance, objectives, and a plan of action necessary to achieve the expected outcomes of this capability.

To expedite the implementation of this capability, DLA could use existing instructions and SOPs (e.g., Disposition procedures) as the basis of the exchange/sale capability. The Processes and Systems Changes section lays out our recommended changes to DLA's current processes and systems to implement and execute this program. If the current processes and systems are modified, these changes should be documented and retained as separate and distinct instructions or SOPs.

Processes and Transactions

The use of exchange/sale represents a new capability within DLA, and with that new processes are required, or existing processes will need to be modified. In turn these new processes require systems changes to fully automate and make efficient the capabilities. Once implemented these process and systems changes will allow for exchange/sale to be accomplished as any other materiel issue and accounting process.

The cardinal requirement for all of the processes and systems changes is to identify and maintain the differentiation throughout the ERS sale. This is essential for not only the proper transactional handling, but is also manifest in the physical distribution elements of the sale. As described below the pricing, order administration, handling, and transportation each require recognition of the ERS sale.

Incorporate Process to Identify Items

All items available for exchange/sale must be ERS. However, not all ERS is viable for exchange/sale. In addition to the established limitations (demilitarization, shelf life, etc.), the items must be in commercial use, or have commercial value. As noted in the findings, the market for piece parts is extremely limited, and the return on investment is minimal. Larger assemblies (parts for automobiles, material handling equipment, and conveyor systems) are in much higher demand and will result in commensurate higher returns.

The basic identification process currently exists within J34 Planning. The monthly inventory stratification event provides the initial set of materiel availability. Beyond the parameters of this initial identification, business rules around risk and market estimates are required. The following recommendations are germane:

- Determine acceptable risk of inventory level
 - Compare on-hand quantities to forecasted demand and known changes, e.g., retirement of weapons systems, engineering changes making parts obsolete, or new programs providing the materiel
 - Evaluate procurement lead time; by definition, ERS can be difficult to procure
- Determine cost and workload impact particularly within the distribution centers
 - Primary mission support cannot be negatively impacted
 - Level of segregation—increased returns versus level of effort to create homogenous lots
- Estimate market conditions
 - Related to the known characteristics for anticipated return on items—piece parts have little value, assemblies have higher potential values.

Order Management Process

The basic Order Management Process for sales orders can be retained. However, a method of identification for ERS sales must be created because the characteristics of

these orders differ from the traditional sales and purchase orders. To support the required Order Management Process, six capability requests were created:

- Identify ERS Sales Orders—once identified, these orders can move through the remaining processes efficiently and ensure that all requirements associated with the ERS sale are met.
- Create a New Customer Identification—while this capability exists, to include “temporary” accounts the ERS sales will be to non-traditional DLA customers, i.e., commercial entities. This capability assures these transactions can be readily identifiable.
- Assign a Non-Standard Price—this is a key capability as it supports auditability and financial requirements related to inventory valuation.
- Conduct Nontraditional Financial Transactions—the standard financial processes within DLA and GSA conflict with timing and those transactions associated with collection of GSA fees.
- Manage Special Shipping Instructions—the normal exchange/sales process requires buyers to pick up materiel at the sales location. However, DLA does not allow third party transportation providers onsite, necessitating special instructions to the shipping activities at the distribution centers.
- Manage and Retrieve Evidential Matter—to directly support the enhanced auditability and visibility requirements will require new capabilities to efficiently and effectively retrieve all transactions associated with the ERS sales process.

Financial Process

The basic financial transaction supports the foundation of the ERS sales process. However, transactions associated with fees and payments from GSA are required. Additionally, because the sales of this materiel will become part of the Working Capital Fund (WCF), the transactions associated with this may need to be altered. It will also be essential to clearly communicate that although these funds revert to the WCF, they do not automatically infer obligation authority.

A determination of whether the title of the materiel will pass at sale or delivery must be made. This impacts the financial process as well as the distribution/transportation process. To simplify the overall process, DLA should treat the ERS sale as FOB Destination. Under these terms, the title of the materiel does not pass to the buyer until the materiel is delivered, eliminating the need to allow third-party arranged transportation service providers onto DLA facilities. Not only does this support facility security, but it also simplifies the marking and labeling process within the distribution facilities.

Distribution/Transportation Process

The basic processes within distribution and transportation operations remain the same, but for those transactions flagged as sale of ERS, the following process changes are required:

- Because this materiel will be shipped to non-traditional customers, a segregation location for the materiel distinct from existing customers will be required

-
- Because the buyer should have already been entered into the customer system, no additional effort should be required to generate appropriate labels, but care should be undertaken to ensure the addressing is complete and accurate
 - Transportation coordination is required, either to allow third-party transportation providers onto the facility, or to ship material to the commercial customer (recommended).

Auditability

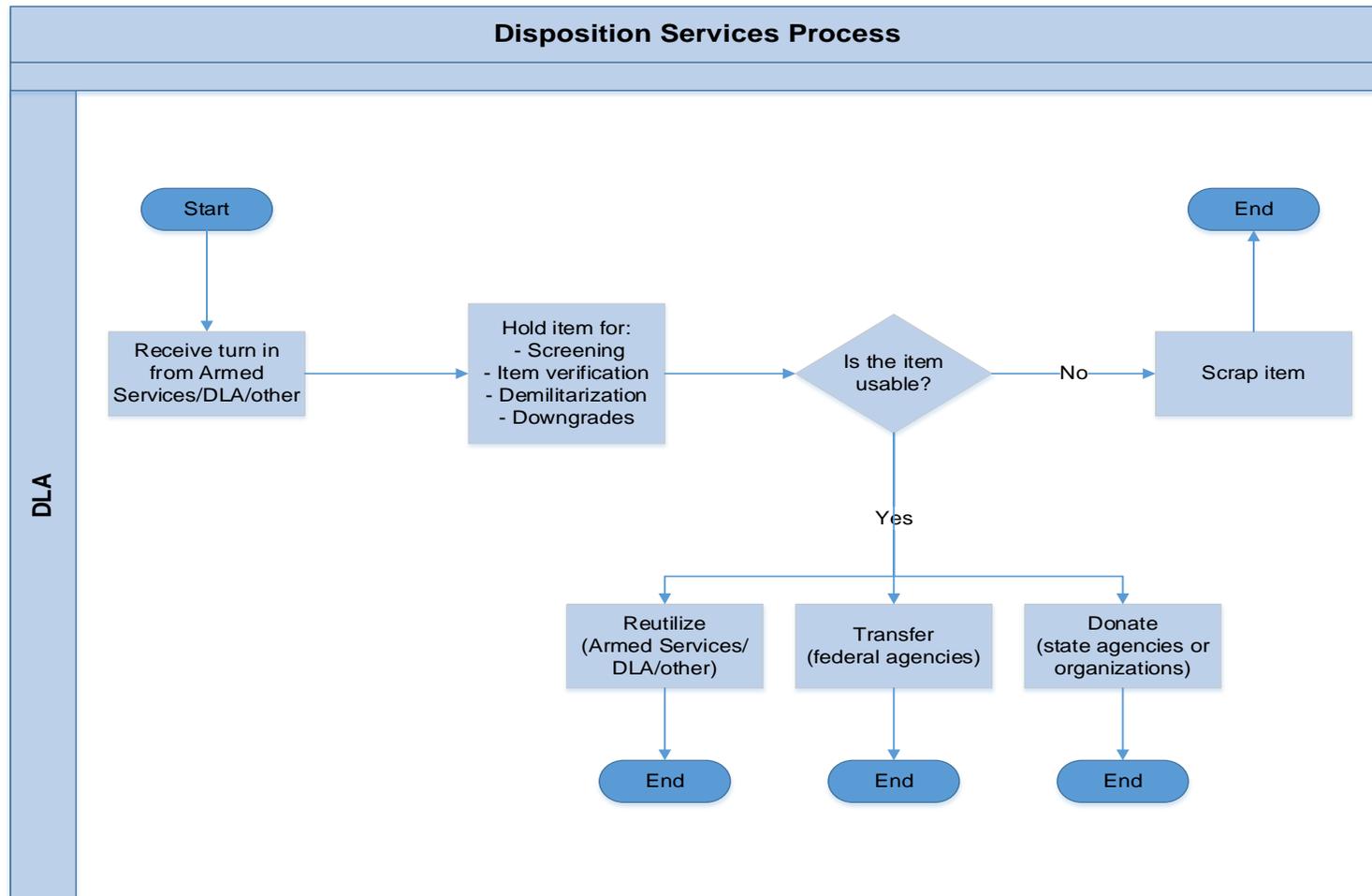
Auditability should remain a primary concern during the implementation and execution of this capability and the development of any policies, instructions, or processes. Aligning DLA's documentation and processes with federal audit standards and requirements will ensure the successful execution of this program and safeguard funds, property, and other assets against loss and misuse. During the development and implementation of any policies, instructions, or processes, we recommend consulting DLA's J3 Audit Office to ensure all applicable documentation and processes will adhere to federal audit standards and requirements.

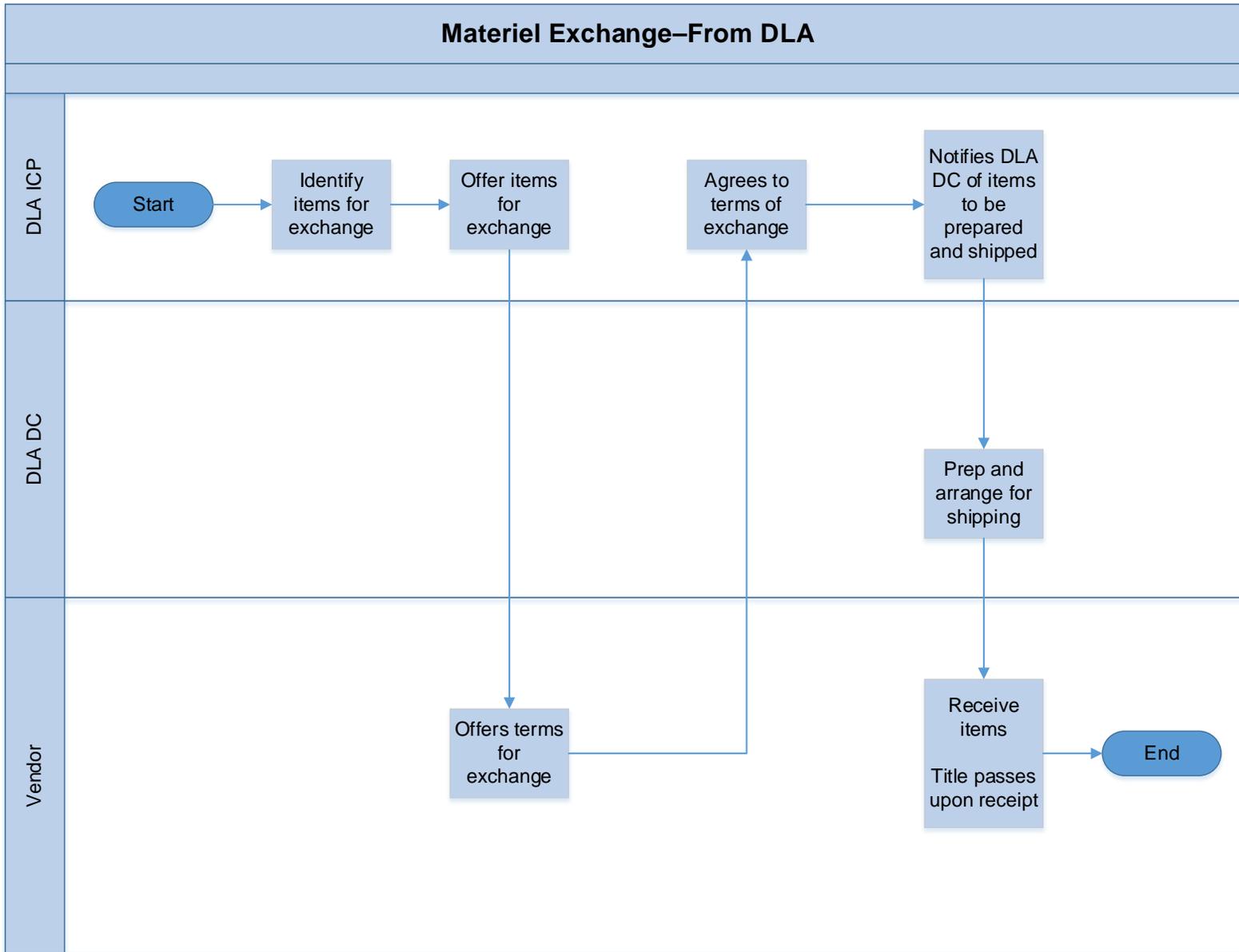
General Lessons Learned from ESEI

Appendix C references the lessons learned from Phase 1 of the ESERS project. The lessons learned in Phase 1 remain valid: R&D projects by their nature require changes to routine and the investment of time and effort. For this particular project, the lack of urgency for inventory reduction and the large obligation of financial and personnel resources resulted in an uneven execution of the project plan. This was exacerbated by the lack of a definitive process owner within DLA and the number of functional areas required in the development and execution of an exchange/sale program. Only the establishment of the DLA IPT in February 2019 provided the senior leader direction and focus to address the multitude of requirements necessary. Future R&D projects that cross more than two functional organizations may benefit from establishing an IPT early in the project to ensure support from senior leadership and the necessary participation to meet the requirements for a successful project.

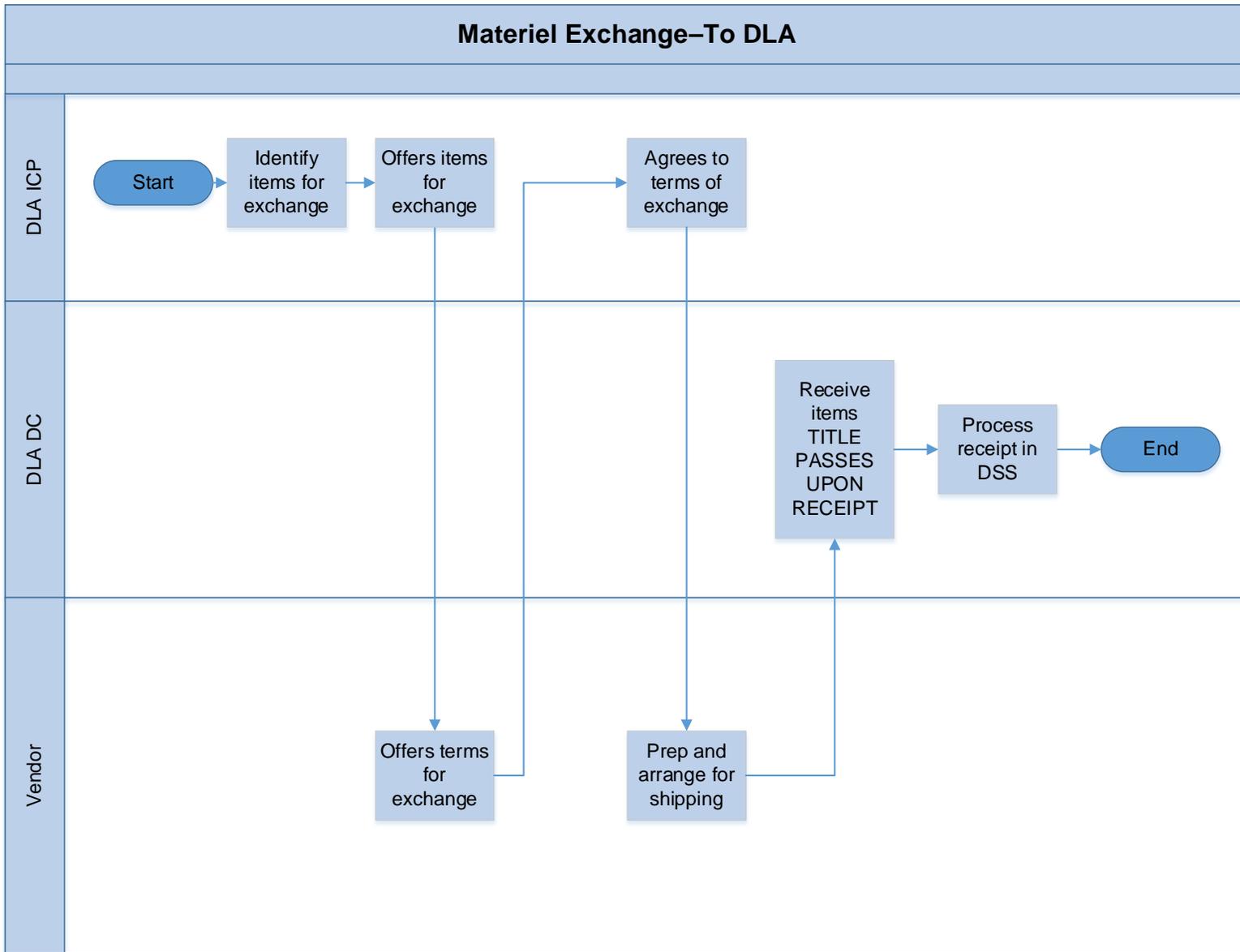
Appendix A

Process Flows



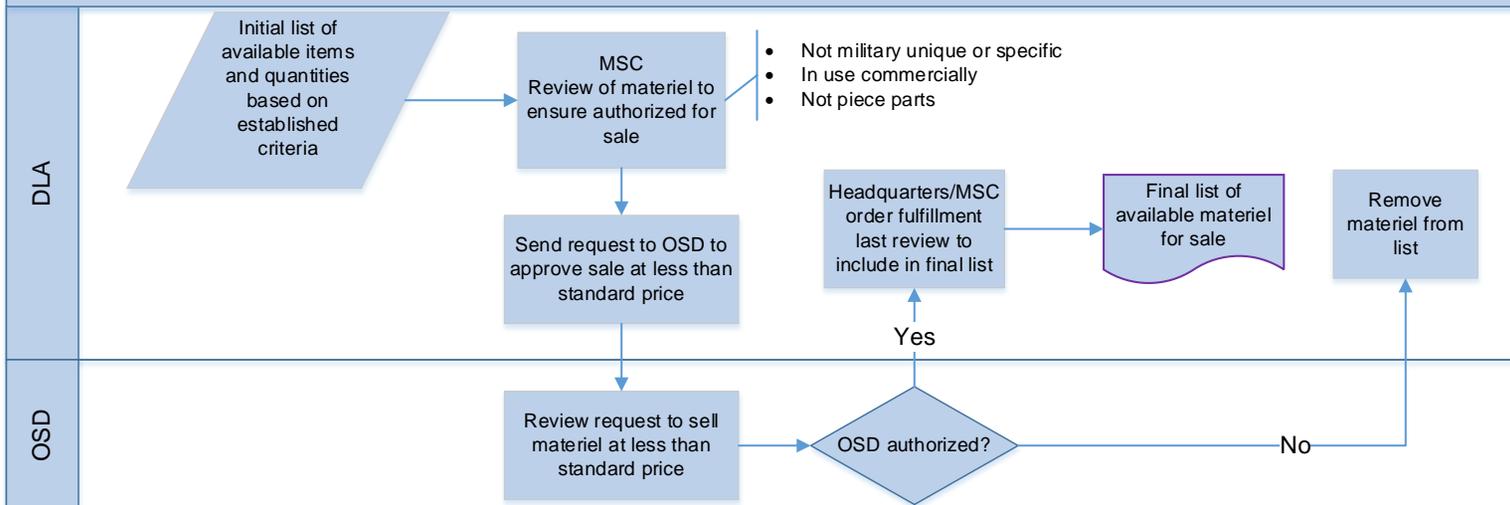


Note: DC = Distribution Center; ICP = Inventory Control Point.



Note: DSS = Distribution Standards System.

Materiel Identification for Sale

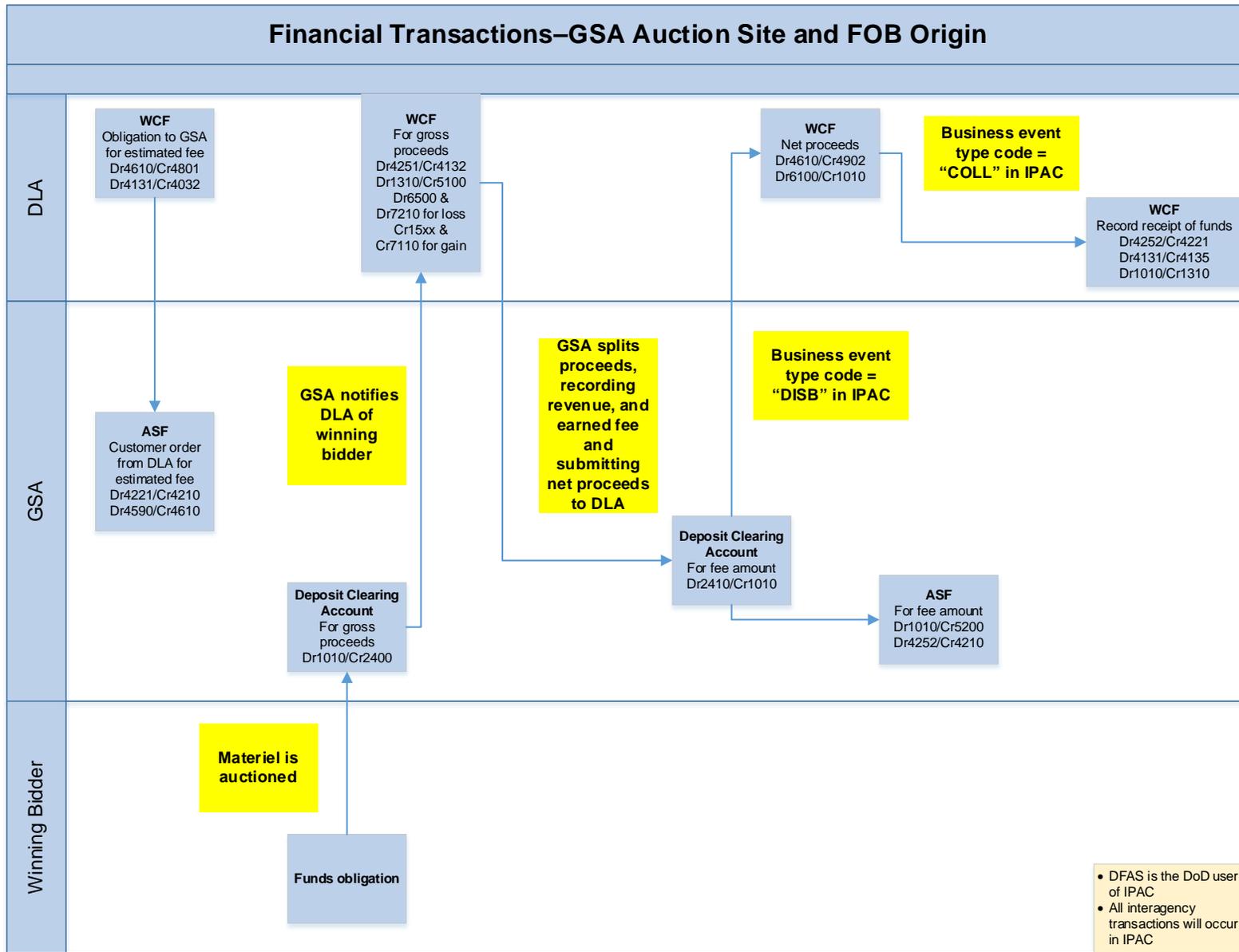


J34-Planning

Execute systems query using established criteria for initial list

- 1) No PRS on hand
- 2) No CRS requirement
- 3) Greater than nth multiple of ERS on hand
 - a. At DLA director command, where anticipated ROI could be less than storage and repurchase
 - b. At MSE director command, based on economics where anticipated ROI > storage and repurchase
 - c. In either case, new ERL multipliers from LMI are required that extend the salvage rate % from current 3% to x%, this table will then define the nth multiple of stock that is economically feasible to sell in (b) or an order of precedence for going below what is economically feasible in the case of (a)
- 4) Demilitarization A and Q6 items only
- 5) No FAT, LSE, or FSI items
- 6) No shelf life items
- 7) COTS only
- 8) MAP >= \$50
- 9) PLT <= 300D
- 10) AAC > X
- 11) Over 75% of on hand assets are stocked at DDSP and/or DDJC
- 12) No sole source items
- 13) ADF < 10

Note: AAC = Acquisition Advice Code; ADF = Annual Demand Frequency; MSC = Major Subordinate Command; MSE = Military Service Engineering; OSD = Office of the Secretary of Defense; ROI = return on investment.



Note: ASF = Acquisition Services Fund, DFAS = Defense Finance and Accounting Services; IPAC = Intra-governmental Payment and Collection.

Appendix B

Estimated Return Percentages

FSC	Nomenclature	Estimated return— optimistic	Estimated return— realistic	Estimated return— pessimistic
7310	Food Cooking, Baking, and Serving Equipment	5%	2%	1%
6220	Electrical Vehicle Lights and Fixtures	20%	10%	2%
3110	Bearings, Antifriction Unmounted	5%	2%	1%
5930	Switches	2%	2%	1%
4930	Lubrication and Fuel Dispensing Equipment	5%	2%	2%
5925	Circuit Breakers	2%	2%	1%
3040	Miscellaneous Power Transmission Equipment	5%	2%	1%
6210	Indoor and Outdoor Electrical Lighting Fixtures	10%	2%	2%
7360	Sets, Kits, and Outfits: Food Preparation and Serving	5%	2%	2%
1680	Miscellaneous Aircraft Accessories and Components	5%	2%	1%
5999	Miscellaneous Electrical and Electronic Components	10%	5%	2%
3120	Bearings, Plain Unmounted	5%	2%	1%
5365	Rings, Shims, and Spacers	2%	2%	1%
5961	Semiconductor Devices and Associated Hardware	2%	2%	1%
5935	Connectors, Electrical	2%	2%	1%
4920	Aircraft Maintenance and Repair Shop Specialized Equipment	10%	5%	2%
5895	Miscellaneous Communication Equipment	2%	2%	1%
6515	Medical and Surgical Instruments, Equipment, and Supplies	5%	2%	2%
5915	Filters and Networks	2%	2%	1%
4810	Valves, Powered	5%	2%	1%
5945	Relays and Solenoids	2%	2%	1%
4720	Hose and Tubing, Flexible	2%	2%	1%
6680	Light and Gas Flow, Liquid Level, and Mechanical Motion Measuring	5%	2%	1%
7320	Kitchen Equipment and Appliances	5%	2%	2%
6685	Pressure, Temperature, and Humidity Measuring and Controlling Instruments	5%	5%	2%

FSC	Nomenclature	Estimated return— optimistic	Estimated return— realistic	Estimated return— pessimistic
4730	Fittings and Specialties; Hose, Pipe, and Tube	2%	2%	1%
2995	Miscellaneous Engine Accessories Aircraft	5%	2%	1%
4235	Hazardous Material Spill Containment and Clean-up Equipment and Material	10%	5%	2%
4710	Pipe and Tube	2%	2%	1%
2520	Vehicular Power Transmission Components	20%	10%	2%

Appendix C

Lessons Learned from ESERS

There were many valuable lessons learned while executing Phase 1, ESERS which formed the foundation for Phase 2, ESEI. The key lessons learned from ESERS include the following:

- Overarching:
 - Implementation of this capability requires a change in culture and inventory policies.
 - To achieve this, a “tone at the top” is critical for implementation.
- Pre-Sale:
 - Authorization to sell or exchange at less than standard price is required from OSD, for each event.
 - There is a potential for long delays. There are no blanket waivers available and response time is dependent upon early notification of the request, clarity of the request and workload.
 - There are conflicts between GSA and DLA’s financial and order management transaction processes that must be addressed.
 - Restrictions on the sales, such as buy-back and profit sharing, are not standard practices within the GSA processes.
 - To include these requirements, DLA would assume responsibility for contract management post-sale.
 - Workaround processes are manually intensive, do not meet audit requirements, and are generally not sustainable.
- Sale:
 - A lack of asset information, including condition, shelf-life, warranty, and other data was requested from commercial vendors to determine resell value and commercial use of the materiel.
 - According to commercial vendors, in addition to increase asset information, segregating items by commodity type, rather than as lots, would generate more interest.
 - Potential alternative to DLA implementing the capability in house would be to outsource the exchange of extra (non-excess) materiel for similar items on DLA’s behalf to a commercial contractor.
- Process and Systems:
 - Implementation of the capability may require obtaining a Federal Asset Sales’ (eFAS) waiver to sell materiel without using a GSA designated Sales Center or the GSA Auction Website.

-
- Potential near-term solution to implement the capability, would be to establish reusable manual processes that meet audit readiness requirements that can be employed until the required system changes can be made.
 - Implementing revenue-sharing procedures that will allow DLA to share in the profit gained from exchange or sale of materiel and then use those proceeds to buy similar items, is a potential solution to increase revenue from the capability.

Appendix D

Abbreviations

AAC	Acquisition Advice Code
AAO	Approved Acquisition Objective
ADF	Annual Demand Frequency
ADQ	annual demand quantity
ASF	Acquisition Services Fund
COTS	commercial off-the-shelf
CRS	Contingency Retention Stock
DC	Distribution Center
DDJC	Defense Distribution Depot San Joaquin, California
DDSP	Defense Depot Susquehanna, Pennsylvania
DFAS	Defense Finance and Accounting Services
DLA	Defense Logistics Agency
DoD	Department of Defense
DSS	Distribution Standards System
EM	evidential matter
ESERS	Exchange/Sale of Economic Retention Stock
ERL	Economic Retention Limit
ERS	economic retention stock
FASAB	Federal Accounting Standards Advisory Board
ESEI	Exchange/Sale of Eligible Inventory
FAT	first article testing
FMR	Federal Management Regulation
FOB	Freight on Board
FSC	Federal Supply Code
FSG	Federal Supply Group
FSI	flight safety indicator
GSA	General Services Administration
ICP	Inventory Control Point
IPAC	Intra-governmental Payment and Collection

IPT	integrated process team
LSE	life-saving equipment
MAP	moving average price
MSC	Major Subordinate Command
MSE	Military Services Engineering
NIIN	National Item Identification Number
OSD	Office of the Secretary of Defense
PRS	Potential Reutilization Stock
R&D	research and development
ROI	return on investment
SOP	standard operating procedure
WCF	Working Capital Fund