**C2. CHAPTER 2**

**BUSINESS CONCEPTS AND ENVIRONMENTS**

C2.1. OVERVIEW

C2.1.1. Defense Logistics Management System. The Defense Logistics Management System (DLMS) provides standard procedures and data formats to link the various component organizational elements of the Defense Logistics community including: inventory control points (ICPs), distribution depots, maintenance depots, transportation nodes, and end users in posts, camps, stations, ships, and deployed units. The DLMS addresses the different functional processes of logistics and provides standards to exchange data across the Military Services, Defense Agencies, other Federal Agencies, foreign national governments, international government organizations, and nongovernment participants. As other electronic business (EB) methods emerge, DLMS will incorporate these new capabilities into the DOD logistics business processes, as appropriate.

C2.1.2. Purpose. This chapter provides an overview of some of the technologies and procedures that all participants must implement to employ the DLMS across the range of participating organizations. This chapter also provides a road map to other parts of the manual that may provide more details about specific topics.

C2.1.3. Legacy Data Formats. When the DLMS Supplements are completely incorporated into the DoD logistics business processes, some of the data currently contained in the Defense Logistics Standard Systems (DLSS) legacy 80 record position transactions (hereafter referred to as “legacy formats”) will be unnecessary. The Defense Automatic Addressing System (DAAS) will continue to execute the DLSS error notification processes until the Department of Defense has totally implemented the DLMS.

C2.2. ENVIRONMENTS

C2.2.1. DLMS Implementation Architecture. The DLMS implementation architecture, a subset of the Defense Information Infrastructure (DII) and the Global Combat Support System (GCSS), is based on the DII Common Operating Environment (COE) and fully complies with the DII COE standards. DLA Logistics Management Standards, operating under this framework, coordinates DLMS related requirements with the DoD Component focal points and interfaces with DLA Transaction Services and the Defense Information Systems Agency (DISA) to ensure that all DII COE requirements are fulfilled.

C2.2.2. Global Exchange Service.

C2.2.2.1. Overview. DLA Transaction Services maintains the Global Exchange Service (GEX) program. The DoD GEX sites are operated by DLA Transaction Services. The GEX functions as the single interface among Government and commercial trading partners conducting electronic commerce and electronic data interchange (EDI) activities. Using the GEX results in interoperability, economies of scale, and standards compliance. The GEX translation and conversion services enable the interoperability required for DLMS implementation in a mixed DLMS/DLSS legacy 80 record position transaction environment. The DLMS implementation architecture supports both the pass-through of EDI transactions and translation services for inbound and outbound transactions. This chapter discusses the system architectures for processing DLMS transactions and reviews the functions of EDI translation software/hardware and their relationship to component logistics application systems. The EDI translator and other portions of the systems architecture developed for DLMS shall support other EDI applications including exchanges with industry.

C2.2.3. Communication. In providing EDI telecommunication services, DLA Transaction Services utilizes the standard GEX software developed to support the DoD Electronic Commerce Infrastructure. The GEX application provides the capability to securely receive and send transactions via many different telecommunication protocols, sort/route the transactions, apply the appropriate translation/mapping utilities, provide decoding/validation of American National Standards Institute Accredited Standards (ANSI) Accredited Standards Committee (ASC) X12 syntax rules, log all activities, archive files, alert users of errors, and apply routing/distribution list processes.[[1]](#footnote-1)

C2.3. DLA TRANSACTION SERVICES ELECTRONIC BUSINESS INFRASTRUCTURE

C2.3.1. Overview. DLA Transaction Services is the lead GEX component supporting DLMS implementation. In addition to supporting the DLMS environment, the DAAS infrastructure supports the EDI needs of the full range of EDI transactions exchanged among DoD, Federal Civil Agencies, and security assistance countries and their trading partners. This infrastructure interacts with other logistics infrastructures to ensure that DoD's access needs are met, and also interacts with the DoD EB infrastructure for multiple EDI efforts.

C2.3.2. Purpose. The DAAS EB infrastructure was developed to meet the current and anticipated requirements for a logistics information infrastructure that can operate fully between the Department of Defense, other Government Agencies, and their trading partners. The trading partners may be internal to the Department of Defense or external commercial activities and foreign countries. DAAS is designed to support a wide range of emerging EB business practices and interfaces. DAAS provides EB capabilities such as translation, store/forward of messages, routing, file management, transaction recovery, and statistics generation. All traffic through DAAS is encrypted. Secure File Transfer Protocol (SFTP) is predominate but other forms of can be provided if required by Government and/or commercial trading partners.[[2]](#footnote-2) DAAS also provides end-to-end support of several prime vendor initiatives within the Government, functioning as a full service value added network (VAN) for military customers. DAAS can provide this capability to prime vendors if requested by the functional sponsor.

C2.3.2. Defense Automatic Addressing System Interfaces. The DAAS infrastructure can interact with other logistics systems to meet DoD logistics data exchange and data access needs. DAAS interfaces enable the DoD to receive, edit, route, and collect a wide range of logistics data in various electronic formats. The data are then incorporated into interactive databases that provide current information, in detailed or roll-up formats, to users at all levels in the DoD logistics process.

C2.4. TRANSACTION FLOW

C2.4.1. Transactions. The DLMS provides descriptive procedures, transactions, and data formats for computer-to-computer communications. The transactions initiate a logistics action (e.g., requisition an item, authorize a funds transfer, ship an item). The transactions are structured and formatted to be transmitted by computer systems without human intervention.

C2.4.2. DLA Transaction Services. DLA Transaction Services acts as a central node for all DLMS transactions. Transactions flow from the originator's computer to the DAAS operated by DLA Transaction Services. DAAS will edit the transaction for correct format, retain an image in an interactive data base for user access, and route the transaction to the correct recipient(s). The receiving computer(s) will process the transaction and initiate the appropriate logistics action. This action will frequently result in generation of additional DLMS transactions to other systems and/or responses back to the originator via DAAS.

C2.4.3. Transaction Gateway. DLA Transaction Services will also act as the gateway for DLMS transactions to be routed to and from Foreign Military Sales (FMS)/Security Assistance (SA) customers and contractor participants.

C2.5. DATA REQUIREMENTS AND FORMATS

C2.5.1. General Information. The DLMS uses ANSI ASC X12 transactions for EDI and X12 based extensible markup language (XML). EDI is widely used in the private sector to conduct business operations, and also between industry and the Government in acquisition, transportation, finance, and other functional areas. The DLMS extends this electronic connectivity to internal DoD logistics operations. The DLMS may also expand to include other emerging EB methods as they are standardized and approved for use by the Department of Defense.

C2.5.1.1. Electronic Data Interchange Standards. The ANSI ASC X12 EDI standards define transaction sets that trading partners use to exchange business information. A transaction set may be considered the equivalent of a business form (e.g., a purchase order, invoice, or requisition). Transaction sets consist of a group of segments in a specified order. Segments consist of one or more data elements, also in a specified order. The ANSI ASC X12 standards define the general data characteristics and formats. DLMS Supplements to Federal ICs define the specific data formats to be used in DLMS transactions and also define mandatory and optional usage requirements for transactions. Except for the communications supplements in this chapter, DLMS Supplements are grouped by logistics functional area in subsequent volumes of this manual. Component application systems shall conform to the requirements specified in those DLMS Supplements.

C2.5.1.2. X12 Based Extensible Markup Language. XML is a simple and flexible information exchange format well suited to support web enabled business applications. DLA Logistics Management Standards developed XML schemas for use in DoD logistics. The XML schemas equate to the DLMS ANSI ASC X12 IC/Supplements, which can be accessed from the DLA Logistics Management Standards Website DLMS Supplement page that represents DLMS ANSI X12-based EDI transactions.

C2.5.2. Editing

C2.5.2.1. General. Data contained in DLMS transactions must be complete and accurate for the receiving computer systems to process. The following paragraphs define principles for maintaining accurate data within the DLMS for all participants.

C2.5.2.2. Edit at Origin. DLMS procedures require recipients to edit and, if necessary, reject transactions back to the sender. Originating activities should maximize editing and validation on their own transactions prior to transmission; this can minimize the expense and delay involved in processing erroneous transactions. Outbound transactions must meet all DLMS Supplement requirements. Components may apply more stringent or specific edit requirements on outbound transactions to meet their business requirements

C2.5.2.3. Use Data Only as Defined. Data elements shall carry ONLY the data specifically defined in the DLMS Supplements. Capabilities exist within the DLMS to support DoD Component unique data. However, DoD Components shall submit proposed DLMS changes following Volume 1, Chapter 3 requirements to address any planned usage of Component-unique data.

C2.5.3. Error Processing

C2.5.3.1. Transaction Set (TS) 997, Functional Acknowledgement. DLMS uses TS 997 when the translator encounters an error that violates ANSI ASC X12 syntax rules. TS 997 may also be used to acknowledge receipt of a transaction set without error when agreed to between the Department of Defense and a commercial trading partner. Use of TS 997 is discussed in more detail in Appendix 8 of this manual and in DLM 4000.25-4, Defense Automatic Addressing (DAAS) Manual.

C2.5.3.2. DLMS Supplement 824R, Reject Advice. DLMS 824R is used by the transaction recipient to reject a DLMS transaction that could not be processed due to erroneous or missing data based on requirements identified in the DLMS Supplement for a particular transaction. DLMS 824R is generated as an exception by DAAS and DoD Component application programs to convey information to the sender’s application process. Originating sites shall possess technical and procedural means to receive the application advice, correct errors, and retransmit appropriate data. Use of DLMS 824R is discussed in Volume 1, Chapter 4, Functional Application Errors.

C2.5.4. Change Control. DLA Transaction Services is the designated activity to perform change management for the translator used to convert legacy DLSS to DLMS or DLMS to legacy DLSS. DLA Transaction Services shall upgrade the translator as logistics data requirements change and the DLMS is updated to reflect the changes. Volume 1 Chapter 3 discusses the guidelines for maintaining the DLMS and defines the procedures for processing and recording proposed DLMS changes.

C2.5.5. Enveloping. The DLMS supports the bundling of multiple groups of data, referred to as enveloping. Specifically, multiple transactions can be bundled into a single DLMS interchange. Multiple transaction sets of a similar type can be placed into a single functional group, and multiple functional groups can be placed into a single interchange group. The DLMS use of envelopes is consistent with ANSI ASC X12.6 standards. Refer to DLM 4000.25-4, Defense Automatic Addressing (DAAS) Manual (Communications) for details of DLMS envelope usage.

C2.6. COMMUNICATION REQUIREMENTS

C2.6.1. Telecommunication Networks. The method for conveying DLMS transactions from one activity to another will be by DoD and Federal electronic telecommunications networks. DLA Transaction Services is the central node for all DLMS transactions. DoD Components shall route all DLMS transactions to DLA Transaction Services. The Defense Information Systems Network (DISN) is the main network pathway for transmission of transactions to and from the DAAS.[[3]](#footnote-3) Refer to the DLA Transaction Services procedures in DLM 4000.25-4 for DLMS-specific capabilities and requirements for transmitting data within the DISN.

C2.6.2. Common Communications Approach. All participating activities must use a common communications approach. DLA Transaction Services procedures (DLM 4000.25-4) define specific communication requirements. The following paragraphs highlight some of the key communications requirements:

C2.6.2.1. Data transmission shall be via the DISN or other approved alternatives.

C2.6.2.2. Compression algorithms as defined by DLA Transaction Services shall be used.

C2.6.2.3. Transaction set syntax and content shall be in accordance with ANSI ASC X12.6 standards and the implementation conventions/DLMS Supplements defined in this manual.

C2.6.2.4. Transactions through DAAS are encrypted. Paragraph C2.3.2 provides details.

C2.6.2.5. Component activities shall maintain copies of all transmissions for at least one week, and shall be able to retransmit them at the request of the receiving party. DLA Transaction Services shall retain a copy of all receipts and transmissions. The length of the retention periods will vary by the specific transaction set. DLA Transaction Services procedures define the retention period for each type of transaction set.

C2.6.2.6. DLMS transactions are variable length and in many cases have no practical maximum size. However, for transmission purposes, an overall maximum size will be imposed for transaction sets and transmission envelopes (see Chapter 4).[[4]](#footnote-4)

C2.6.3. Technical Solutions. DoD Component activities shall have the discretion to determine the technical means to create the data exchange formats defined above, for example a commercial translator or develop their own software.

C2.7. DLA TRANSACTION SERVICES OPERATIONS

C2.7.1. Functions. DLA Transaction Services is central to all DLMS operations.[[5]](#footnote-5) It performs numerous corporate functions for DLMS operations including:

C2.7.1.1. Performing basic edits and returning any transactions with errors back to the originator.

C2.7.1.2. Archiving all received and transmitted messages, to ensure retransmission capability in the event the original message was lost due to computer or telecommunications failure.

C2.7.1.3. Generating images, as required.

C2.7.1.4. Holding or forwarding transactions per DoD Component profile for the recipient.

C2.7.1.5. Executing "suppress" or other national command directives.

C2.7.1.6. Loading transaction data into the Logistics On-Line Tracking System (LOTS).

C2.7.1.7. Coordinating and providing DoD management information on supply system performance evaluation.

C2.7.1.8. Performing additional functions for requisitioning, including rerouting requisitions to the correct source of supply (SOS).

C2.7.1.9. Rerouting other documents using DoD Component rules and records as appropriate.

C2.7.1.10. Evaluating the "To" address capability for receiving transactions in DLMS versus DLSS format.

C2.7.1.11. Converting transactions from legacy format DLSS to DLMS and from DLMS to DLSS, as required.

C2.7.2. DLMS Enterprise Service Provider. DLA Transaction Services is the central node for DLMS technical and operations support and shall maintain activity profiles recording EDI capability, compression techniques, encryption techniques, communications media, and other address data of the DoD Components.

C2.7.2.1. Capabilities. In its role as the DLMS enterprise service provider and as a DoD distribution point for EDI communications with industry, DLA Transaction Services maintains an extensive capability to translate between EDI formats and other file structures. As required, DLA Transaction Services shall provide translation between DLMS and Component user defined formats; between multiple versions of the ANSI ASC X12 standards; and between other EDI formats, such as XML. In addition, DLA Transaction Services shall support translation between DLSS legacy formats and DLMS formats referred to as “conversion.”

C2.7.2.2. Transition Conversion Requirements. During a transition period of indeterminate length, the Department of Defense will operate in a mixed legacy 80 record position/DLMS environment. DAAS will provide conversion processing between the standard legacy formats and DLMS to support this transition. Legacy format to DLMS conversion tables have been developed that facilitate the conversion of data from legacy format to DLMS, and vice-versa. The conversion tables enable logistics business to be conducted in both environments. To accomplish the conversion, DLA Transaction Services uses a commercial “any to any” mapping software package that supports a robust conversion. The Components are able to use their current format, either legacy format or DLMS, to initiate a transaction. DLA Transaction Services incorporates and maintains a profile of each organization and specifies whether the organization is operating in legacy format, DLMS, or both. The legacy format data elements are retained in DLMS to support the conversion. However, DLMS enhanced data may not be supported in legacy or transitioning systems, so coordination with DLA Logistics Management Standards is required prior to implementation of DLMS enhancements.

1. DLM 4000.25-4, Defense Automatic Addressing System Manual, Appendix 1. [↑](#footnote-ref-1)
2. Additional encryption capability from DAAS includes, Hypertext Transfer Protocol Secure (HTTPS), MQ-Series, Secure Sockets Layer (SSL) and Virtual Private Network (VPN). [↑](#footnote-ref-2)
3. The GEX is a destination not the communication pathway. The GEX is a gateway/platform on the DLA Transaction Services network that performs functions such as sorting, routing and translating. [↑](#footnote-ref-3)
4. Temporary restrictions at the data element level may be imposed on translation requirements to the previous fixed-length formats. [↑](#footnote-ref-4)
5. Complete procedures for DLA Transaction Services are contained in the DLM 4000.25-4, DAAS Manual. [↑](#footnote-ref-5)