Logistics Management Institute

Review of Service-Unique Data and Transactions, Phase II
Air Force Conclusion Briefing

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DI102B1

November 2001

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September 2001

This is the final report (an annotated briefing) for Phase II of a study to determine the extent data elements in the Defense Logistics Standard System (DLSS) are unique to military services and Defense agencies. Incorporating these service-unique data elements into the Defense Logistics Management System (DLMS) is a key factor in the services' implementation of commercial electronic data interchange standards.

This summary of the Phase II effort describes our findings and recommendations for the Air Force–unique data elements in the existing DLMS transactions. This report does not address specific Air Force–unique transactions in detail.

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Summary of Findings

- We encountered no significant difficulties incorporating Air Force–unique data into the DLMS.

  - 56 codes or data elements will be opened in DLMS implementation conventions.
  - 2 code lists will be added to the ASC X12 standard.

- Legacy system constraints reduce the services' ability to fully implement DLMS.

The Department of Defense is replacing the DLSS with the DLMS. The DLMS is based on American National Standards Institute's (ANSI's) Accredited Standards Committee (ASC) X12 Electronic Data Interchange (EDI) standards. In addition to incorporating DLSS data, the DLMS transactions also incorporate many capability enhancements to the existing transaction business rules requested by DoD and civil agencies. Much of the data carried by individual services in data fields available for "intra-service" use are not yet incorporated into DLMS transactions. To enable the individual services and Defense agencies to implement the DLMS fully, we must identify the service-unique data and transactions.

This briefing is a summary of Phase II of the review. We identified Air Force–unique data in the Military Standard Requisitioning and Issue Procedures (MILSTRIP) and Military Standard Transaction Reporting and Accounting Procedures (MILSTRAP) transactions and determined where the data can be incorporated into the DLMS.

Our review of the Air Force–unique data revealed no significant difficulties in incorporating the Air Force data into the DLMS. Because of previous efforts to incorporate enhancements into the DLMS, many Air Force–unique data requirements can be mapped to the DLMS with no additional modifications. However, for the Air Force to use the MILSTRIP and MILSTRAP transactions, 56 items must have codes or data elements opened in the DLMS implementation conventions (ICs). Two of the identified Air Force requirements need ASC X12 data maintenance.

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This incorporation of DLSS data into the DLMS does not take full advantage of the enhanced capability built into the DLMS, primarily because of the legacy system constraints.

Background

- First DLSS established in 1963; additional procedures developed over the next 25 years.

- The computer-to-computer exchange of service and agency documents currently uses a DoD standard.

- Approximately 2 billion exchanges occur annually.

- Existing 80-record position data format limits flexibility.

The DLSS incorporate a series of procedures and electronic transaction formats that govern DoD logistics operations. DLSS transactions convey data about requisitions, inventory, transportation, billing, and other information within the logistics automated data processing (ADP) systems of the military services and Defense agencies. DLSS transactions are crucial for the effective operation of DoD, and nearly 2 billion transactions occur annually.

Constraints of the existing 80-record position format for DLSS transactions restrict the military services and Defense agencies in their ability to fully capitalize on recent ADP technology advances.

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Background (Continued)

- DoD Directive 8190.1 directs the use of approved EDI standards and supporting implementation conventions (ICs) for DoD logistics business transactional data exchange.

- DLMS supports intra-service, inter-service, and commercial exchanges.

- DLMS is the baseline for information exchange requirements and integration of new and evolving technologies.

- Service-unique data and transactions are not included in DLMS.

DoD Directive 8190.1, *DoD Logistics Use of Electronic Data Interchange Standards* (5 May 2000), directs the use of approved EDI standards and supporting ICs for DoD logistics business transactional data exchange.

The DLMS provides a broad base of business rules that are supported by ANSI ASC X12 commercial EDI standards. DLMS is designed to meet DoD's requirements for total logistics support. Adoption of these standards supports DoD's goals—improving and reengineering processes to incorporate commercial practices and increasing reliance on the commercial sector for logistics support. Further, replacing proprietary logistics transaction formats with ASC X12 EDI standards is a necessary steppingstone in the conversion to international open systems standards.

Over the past several years, substantial preparatory work for implementing the DLMS was completed. More than 425 DLSS formats were converted into approximately 26 ASC X12 transaction sets; and approximately 53 federal ICs were developed based on those transaction sets. In addition, the many DLSS manuals were revised into a single comprehensive DLMS manual. The DLMS transactions are based on the existing DLSS 80-record position transaction format; however, the DLMS transactions have greater flexibility and expanded data capability.

Initial development of DLMS transactions did not include the incorporation of most service-unique data elements, logistics transactions, and corresponding business rules.

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Project Objective

- The objective of the project was to support DLMSO and the services involved in the logistics EDI implementation effort by

  - identifying and evaluating current service-unique logistics data exchanges and the use of service-unique data in the DLSS, and

  - recommending actions for incorporating the data into the DLMS or for establishing alternative formats that use other commercial electronic-commerce standards.

LMI is helping the Defense Logistics Management System Office (DLMSO) and the services' logistics community identify their unique data elements, transactions, codes, and corresponding business rules that will be incorporated into the DLMS or converted to EDI transactions. We will also identify requirements for supporting both existing logistics systems and future modernization of the systems. Our study will serve as a foundation for planning and coordinating the DLMS implementation.

We expect enhancements offered by the DLMS will eliminate many service-unique transactions by incorporating the data elements into existing DLMS transactions.

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Scope of Effort

- Unique data elements and transactions managed by the services and the Defense Logistics Agency

- Focus on materiel-related exchanges—functions generally covered by DLSS, MILSTRIP, and MILSTRAP procedures

- Exchanges between and among inventory control points, depots, retail sites (requisitioners), and commercial organizations

Ultimately, this project will identify the unique data elements and transactions for the services and Defense Logistics Agency that could be incorporated into the DLMS.

Our focus is on materiel-related exchanges covered primarily by the DLSS, MILSTRIP, and MILSTRAP procedures because most of the variable fields can be found in these exchanges.

Phase II, Part I Objectives

- Identify and analyze Air Force–unique fields in the DLSS transactions and determine implications for DLMS.

- Document Air Force–unique requirements to be incorporated into the DLMS.

The evolution of the DLSS made supplementing standard DoD transactions and processes with service-unique transactions and data conveyed in standard DoD transactions possible. The DLMSO-led effort began with a review of Army-unique fields in the DLSS transactions and Army-unique transactions. This continued with this review of Air Force–unique fields in the DLMS transactions.

The Air Force–unique document identifiers were analyzed to determine if transactions were unique and had to be included in an existing IC, or if the transaction could be incorporated into an existing DLMS transaction using additional data elements or codes.

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Analysis of Air Force–Unique Data

■ LMI reviewed MILSTRIP and MILSTRAP transactions by

• comparing Air Force record layout from AFMAN 23-110 v.2 with the MILSTRIP and MILSTRAP manuals, DLSS-to-DLMS mapping documents, and appropriate implementation conventions; and

• determining necessary changes to the ICs or X12 standards.

We analyzed each of the Air Force MILSTRIP A–series and FT–series transactions to determine if the data carried in them were unique to the Air Force, or if the transaction's functionality existed in a code carried within the IC. We also analyzed each of the Air Force MILSTRAP D–series transactions to determine service-unique uses.

We compared the Air Force record layouts from the Air Force Manual (AFMAN) 23-110 with the MILSTRIP and MILSTRAP manuals and the DLSS-to-DLMS mapping documents.

In our analysis, we identified where the Air Force record layout differed from DLSS record layout. We then reviewed the appropriate DLMS IC to determine if an existing data element or code was available to convey the Air Force–unique data requirement. If the existing IC could not convey the Air Force data requirement, we looked at the X12 standard to determine if a data element or code was available to carry the data.

Through our analysis, we identified 35 additions to the existing ICs for A–series document identifiers, 4 items to ICs for FT–series document identifiers, and 7 items to ICs for D–series document identifiers.

Appendix A contains a summary of the affected ICs and Appendix B contains the summary of the comparisons of A, F, and D series.

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│ │                                                        │
│ │          Air Force–Unique Data––MILSTRIP               │
│ │                                                        │
│ │                                                        │
│ │   ■ 35 items to be added to DLMS ICs to cover Air      │
│ │     Force A–series transactions are available in       │
│ │     the X12 standard (004030).                         │
│ │                                                        │
│ │                                                        │
│ │   ■ 4 items to be added to DLMS ICs to cover Air       │
│ │     Force FT–series transactions are available in      │
│ │     the X12 standard (004030).                         │
│ │                                                        │
│ │                                                        │
│ │   ■ None of the MILSTRIP changes required by the       │
│ │     identified Air Force–unique data will require      │
│ │     X12 data maintenance.                              │
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Our comparison of Air Force A– and FT–series document identifiers against the MILSTRIP manual identified 39 items that must be added to a number of existing DLMS ICs. Appendix A contains a summary of all changes required, by IC. Appendix B contains a summary of the required Air Force A– and F–series changes, by transaction.

The following items are available in the X12 standard (Version 004030):

- ◆ 180M: Mode of Shipment, Transportation Control Number, Date Shipped

- ◆ 517M: Document Identification Code, Ship To, Bill and Ship To, Bill To Party, Transaction Control Date, Composite Unit of Measure

- ◆ 812R: Media and Statue Code, Supply Condition Code

- ◆ 869A: Advice Code, Demand Code, Do Not Deliver Before, Do Not Deliver After, Special Requirements Code, Project Code

- ◆ 869C: Management Code

- ◆ 870M: Ship From

- ◆ 870N: Cubic Feet, Type Pack Code, Transportation Mode or Method, Country and Activity Code, Air Dimension Code, Water Commodity and Special Handling Code, Weight, Pieces, Priority Designator Code, Project Code

◆ 940R: Water Terminal Identifier, Consolidated and Containerization, Transportation Control Number, Air Terminal Identifier, Shipped on This Date, Shipment Hold Code, Document Identification Code

◆ 945A: Advice Code, Required By.

Air Force–Unique Data—MILSTRAP

- 7 items to be added to DLMS ICs are available in the X12 standard (004030).

- None of the MILSTRAP changes required by the identified Air Force–unique data will require X12 data maintenance.

Our comparison of Air Force D–series document identifiers against the MILSTRAP manual identified seven items to add to a number of DLMS ICs. Appendix A contains a summary of all required changes, by IC. Appendix B contains a summary of the required Air Force D–series changes, by transaction.

The following items are available in the X12 standard (Version 004030):

- ◆ 527D: Supplemental Data, Suffix

- ◆ 846P: Latest Receiving Date/Cutoff Date, Recorded Date

- ◆ 870L: Suffix, Advice Code

- ◆ 947I: Shelf Life Expiration Date.

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Review of Air Force Code Lists

■ We compared AFMAN 23-110 v.2 and MILSTRAP code lists to identify additional Air Force–unique code lists.

  • Two codes for identifying Air Force–unique code lists in data element 1270 will require X12 data maintenance.

We compared Air Force codes listed in the AFMAN 23-110 and the MILSTRAP code lists and identified two code lists that need to be added to X12 data element 1270:

◆ Expendability, Recoverability, and Reparability Category Code

◆ Materiel Management Aggregation Code.

DLMS Enhancement Opportunities

- DLMS ICs reflect the addition of more than 100 data enhancements identified by military services and Defense agencies.

- Service and agency legacy systems restrict using enhanced DLMS transactions.

Converting from existing MILSTRIP and MILSTRAP transactions to the DLMS format is relatively simple. A more difficult and possibly more important task is taking advantage of the enhanced capability and flexibility of the ASC X12 EDI standards and DLMS transactions to streamline business processes and the resulting transactional exchanges. Enhanced data—included or excluded from transactions—must be identified and included in sender and receiver legacy systems. Likewise, some enhancements actually result in the elimination of some data elements.

As part of a DoD EDI study several years ago, the military services and Defense agencies submitted more than 300 proposed data enhancements for consideration. Of those, more than 100 enhancements were added to DLMS EDI ICs. The limiting factor for the enhancements is legacy system constraints on the exchange of enhanced data.

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DLMS Enhancement Opportunities (Continued)

■ The DLMS eliminates the need for several items specific to Air Force–
unique MILSTRIP and MILSTRAP transactions, including the following:

- Decimal locator

- Suffix code to indicate an excess quantity

- Cardpunches to indicate transaction cancellation

- DG_ Backorder series.

Our review of Air Force MILSTRIP and MILSTRAP transactions uncovered several specific opportunities for the use of the enhancements provided by the DLMS:

◆ Eliminates the need for data items (e.g., Decimal Locator) because numeric data fields of the X12 standard can carry at least 15 characters, including decimal points.

◆ Eliminates the need for such items as the use of Suffix Code "A" to indicate a quantity in excess of 99,999 in the DD_ Due-In (procurement instrument source) document.

◆ Eliminates the need for cardpunches to indicate a transaction cancellation or negative quantity because the X12 standard is able to indicate a negative number.

◆ Eliminates the need for the DG_ series of backorder transactions.

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Preliminary Review of Air Force–Unique Transactions

■ There is a large number of Air Force–unique transactions, most of which are intra-system queries and reports.

■ Preliminary analysis shows that various series deal with different issues:

  • B Series: Stock Number User Directory (SNUD) Program
  • X Series: Interchangeability and Substitution Data Program.

The Air Force has a large number of unique transactions. A preliminary survey of the B, M, and X series indicates several of these transactions could be candidates for conversion to the DLMS. No specific information was provided by the Air Force indicating a desire to include the capability of any of these transactions in the DLMS.

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Conclusion

■ Incorporate Air Force–unique data requirements in the DLMS
with minimal ASC X12 additions.

■ Air Force legacy systems do not take full advantage of
enhancement opportunities available in the DLMS transactions.
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Our review of Air Force–unique data elements in the MILSTRIP and MILSTRAP transactions revealed only a small number of elements that are not present in the applicable DLMS ICs. All of these Air Force–unique data requirements represent codes within existing data elements that are present in the ASC X12 standard (version 004030). Two items will require X12 data maintenance.

The Air Force has many B– and X–series unique transactions. The majority of these documents appear to be intra-system transactions that fall outside the scope of the DLMS.

DLMS enhancements embodied in the federal logistics ICs do not appear to be widely used.

Appendix A
Implementation Convention Summary

Air Force use of intra-service fields in the DoD standard A–, D–, and FT–series transactions requires certain data items. Many of these items are available in the ASC X12 standard but are not currently open in the relevant DLMS ICs. Table A-1 lists the ICs that carry Air Force transactions, the associated Air Force ICs, and the items that must be opened for them to do so.

Table A-1. Required IC Changes

DLMS IC	DIC	X12
180M	FTT	2/TD504/055
	FTT	2/N901-2/400/TG—Transportation Control Number (TCN)
	FTT	2/DTM01-2/130/011—Shipped
517M	AN9, AN_, AP_	2/LQ01-2/080/0—Document Identification Code
	AN_	1/N101/060/ST—Ship To
	AN_	2/QTY03[C001-01]/010
	AN_	1/N101/060/BS—Bill and Ship To
	AN_	1/N101/060/BT—Bill-to-Party
	AP_	2/G6201-2/040/BB—Transaction Control Date
527D	DF_	2/LQ01-2/130/A9
	DF_	2/N907[C04001-2]/090/W8—Suffix
812R	FTP	2/LQ01-2/206/83—Supply Condition Code
	FTP	1/LQ01-2/156/DF—Media and Status
846P	DZJ	2/DTM01-2/100/995—Recorded Date
	DJA	2/DTM01-2/100/311—Latest Receiving Date/Cutoff Date
869A	AT_/, AF_	2/LQ01-2/180/74—Demand Code
	AT_/, AF_	2/LQ01-2/180/AL—Special Requirements
	AT_/, AF_	2/DTM01-2/030/064—Do Not Deliver Before
	AT_/, AF_	2/DTM01-2/030/063—Do Not Deliver After
	AT_/, AF_	2/DTM01-2/030/996—Required Delivery
	AT_/, AF_	2/LQ01-2/180/80—Advice Code
	AT_/, AF_	2/LQ01-2/180/78—Project Code
869C	AC	2/LQ01-2/180/84—Management Code
870L	DZ9	2/REF04[C0401-2]/087/W8—Suffix Code
	DZ9	2/LQ01-2/145/80—Advice Code
870M	FTR, FTQ, FTD, FTL, FTZ, FT6	2/N101/090/SF—Ship From
870N	AD5	2/QTY03[C001-01]/050/CF—Cubic Feet
	AD5	2/LQ01-2/145/40—Type Pack Code
	AD5	2/LQ01-2/145/39—Transportation Mode or Method Code
	AD5	2/LQ01-2/145/85—Country and Activity Code
	AD5	2/LQ01-2/145/35—Air Dimension Code

Table A-1. Required IC Changes (Continued)

DLMS IC	DIC	X12
940R	AD5	2/LQ01-2/145/34—Water Commodity and Special Handling Code
	AD5	2/QTY01-2/050/8B—Weight
	AD5	2/QTY03[C001-01]/050/PC—Pieces
	AD5	2/LQ01-2/145/79—Priority Designator Code
	AD5	2/LQ01-2/145/78—Project Code
	AD5	2/LQ01-2/145/33—Air Commodity and Special Handling Code
	AFX	2/LQ01-02/130/37—Water Terminal Identifier
	AFX	2/LQ01-02/130/38—Consolidated and Containerization Point Identifier Code
	AFX	2/N901-2/400/TG—Transportation Control Number (TCN)
	AFX	2/LQ01-02/130/36—Air Terminal Identifier
	AFX	2/G6201-2/090/11—Shipped on This Date
	AFX	2/LQ01-2/130/82—Shipment Hold Code
	AFX	2/REF01-2/150/TG—Transportation Control Number
	A5J, AFJ, ACJ AKJ	2/LQ01-2/130/0—Document Identification Code
945A	A6_	2/G6201-2/050/BD—Required By
	A6_	2/LQ01-2/100/80—Advice Code
947I	D8_, D9_	2/G6201-2/080/BJ—Shelf Life Expiration Date

Appendix B
Air Force A–, D–, and FT–Series Transaction Summaries

The following tables summarize each document series by listing document identification codes, appropriate DLMS ICs, and ASC X12 components in each transaction that must be opened in the IC, and items in the document that currently are not in the ASC X12 standard. The A–, D–, and FT–series DLSS transactions that do not include service-unique fields have already been incorporated into the DLMS and are not listed here.

Table B-1. A–Series Summary

DIC	DLMS IC	X12	Add to IC?	Add to X12?
A5J, AFJ, ACJ, AKJ	940R	2/LQ01-2/130/0—Document Identification Code	Yes	No
A6_	945A	2/LQ01-2/100/80—Advice Code	Yes	No
		2/G6201-2/050/BD—Required By	Yes	No
AC	869C	2/LQ01-2/180/84—Management Code	Yes	No
AD5	870N	2/LQ01-2/145/40—Type Pack Code	Yes	No
		2/LQ01-2/145/33—Air Commodity and Special Handling Code	Yes	No
		2/LQ01-2/145/34—Water Commodity and Special Handling Code	Yes	No
		2/LQ01-2/145/35—Air Dimension Code	Yes	No
		2/LQ01-2/145/39—Transportation Mode or Method Code	Yes	No
		2/QTY03[C001-01]/050/PC—Pieces	Yes	No
		2/QTY01-2/050/8B—Weight	Yes	No
		2/QTY03[C001-01]/050/CF—Cubic Feet	Yes	No
		2/LQ01-2/145/79—Priority Designator Code	Yes	No
		2/LQ01-2/145/85—Country and Activity Code	Yes	No
		2/LQ01-2/145/78—Project Code	Yes	No
AFX	940R	2/LQ01-02/1300/38—Consolidated and Containerization Point Identifier Code	Yes	No
		2/LQ01-2/130/82—Shipment Hold Code	Yes	No
		2/G6201-2/090/11—Shipped on This Date	Yes	No
		2/LQ01-02/1300/37—Water Terminal Identifier	Yes	No
		2/N901-2/400/TG—Transportation Control Number (TCN)	Yes	No
		2/LQ01-02/1300/36—Air Terminal Identifier	Yes	No
		2/REF01-2/150/TG—Transportation Control Number	Yes	No
AN_	517M	1/N101/060/BS—Bill and Ship To	Yes	No

Table B-1. A–Series Summary (Continued)

DIC	DLMS IC	X12	Add to IC?	Add to X12?
		1/N101/060/BT—Bill-to-Party	Yes	No
		2/LQ01-2/080/0—Document Identification Code	Yes	No
		2/QTY03[C001-01]/010	Yes	No
		1/N101/060/ST—Ship To	Yes	No
AN9, ANZ	517M	2/LQ01-2/080/0—Document Identification Code	Yes	No
AP_	517M	2/G6201-2/040/BB—Transaction Control Date	Yes	No
		2/LQ01-2/080/0—Document Identification Code	Yes	No
AT_/, AF_	869A	2/LQ01-2/180/80—Advice Code	Yes	No
		2/LQ01-2/180/74—Demand Code	Yes	No
		2/LQ01-2/180/78—Project Code	Yes	No
		2/DTM01-2/030/996—Required Delivery	Yes	No
		2/DTM01-2/030/063—Do Not Deliver After	Yes	No
		2/DTM01-2/030/064—Do Not Deliver Before	Yes	No
		2/LQ01-2/180/AL—Special Requirements	Yes	No

Table B-2. D–Series Summary

DIC	DLMS IC	X12	Add to IC?	Add to X12?
D8_, D9_	947I	2/G6201-2/080/BJ—Shelf Life Expiration Date	Yes	No
DF_	527D	2/LQ01-2/130/A9	Yes	No
		2/N907[C04001-2]/090/W8—Suffix	Yes	No
DJA	846P	2/DTM01-2/100/311—Latest Receiving Date/Cutoff Date	Yes	No
DZ9	870L	2/LQ01-2/145/80—Advice Code	Yes	No
		2/REF04[C0401-2]/087/W8—Suffix Code	Yes	No
DZJ	846P	2/DTM01-2/100/995	Yes	No

Table B-3. FT–Series Summary

DIC	DLMS IC	X12	Add to IC?	Add to X12?
FT6	870M	2/N101/090/SF—Ship From	Yes	No
FTD	870M	2/N101/090/SF—Ship From	Yes	No
FTL	870M	2/N101/090/SF—Ship From	Yes	No
FTP	812R	2/LQ01-2/206/83—Supply Condition Code	Yes	No
		1/LQ01-2/156/DF—Media and Status	Yes	No

Table B-3. FT–Series Summary (Continued)

DIC	DLMS IC	X12	Add to IC?	Add to X12?
FTQ	870M	2/N101/090/SF—Ship From	Yes	No
FTR	870M	2/N101/090/SF—Ship From	Yes	No
FTT	180M	2/TD504/055	Yes	No
		2/N901-2/400/TG—Transportation Control Number (TCN)	Yes	No
		2/DTM01-2/130/011—Shipped	Yes	No
FTZ	870M	2/N101/090/SF—Ship From	Yes	No

Appendix C
Abbreviations

ADP   automated data processing

AFMAN   Air Force manual

ANSI   American National Standards Institute

ASC   Accredited Standards Committee

DLMS   Defense Logistics Management System

DLMSO   Defense Logistics Management System Office

DLSS   Defense Logistics Standard Systems

EDI   Electronic Data Interchange

IC   implementation convention

MILSTRAP   Military Standard Transaction Reporting and Accounting Procedures

MILSTRIP   Military Standard Requisitioning and Issue Procedures

SNUD   Stock Number User Directory