DEFENSE LOGISTICS AGENCY
HEADQUARTERS
8725 JOHN J. KINGMAN ROAD
FORT BELVOIR, VIRGINIA 22060-6221

March 08, 2018

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Approved Defense Logistics Management Standards (DLMS) Change (ADC)
                     1275, Clarifying the Use of Special Characters in DLMS Electronic Data
                     Interchange (EDI) Transactions.

        We are forwarding the attached approved change to DLM 4000.25, Defense Logistics
Management Standards, for implementation. This change is effective immediately.

        Addressees may direct questions to Ms. Sylvia Williams, e-mail:
DLMSDataDictionary@dla.mil. All others must contact their Component designated Process
Review Committee (PRC) representative available at:
www.dla.mil/HQ/InformationOperations/DLMS/committees.

                                                            HEIDI M. DAVEREDE
                                                            Director
                                                            Enterprise Business Standards Office

Attachment
As stated

Distribution:
Supply PRC
Finance PRC
Supply Discrepancy Reporting (SDR) PRC
Joint Physical Inventory Working Group (JPIWG)
Joint Small Arms/Light Weapons Coordinating Group (JSALWCG)

cc:
ODASD (SCI)

Attachment to ADC 1275
Clarifying the Use of Special Characters in DLMS EDI Transactions

1. ORIGINATING SERVICE/AGENCY AND POC INFORMATION:

    a. <u>**Technical POC**</u>**:** Ms. Sylvia Williams, Enterprise Business Standards Office (EBSO), DLMSSupply@dla.mil

    b. <u>**Functional POC**</u>**:** Ms. Sylvia Williams, EBSO, DLMSSupply@dla.mil

2. FUNCTIONAL AREAS, LOGISTICS AND TRANSACTION CHANGES:

    a. <u>**Primary/Secondary Functional Area:**</u> Supply, Finance, Distribution

    b. <u>**Logistics and Transaction Changes:**</u>

☑	Category	☑	Category	☑	Category
	Billing		Physical Inventory		Contract Admin
	Discrepancies / Deficiencies		MILSTRAP		DoDAAD
	Serialization		MILSTRIP		MAPAD
	Small Arms/Light Weapons		MRA		LMARS
	pRFID		Disposition	✓	DLM Publications
	GFP		DOD BRAC		

3. REFERENCES:

    a. X12.5 Interchange Control Structures (available to X12 members at www.x12.org)

    b. Defense Logistics Manual (DLM) 4000.25 Defense Logistics Management Standards (DLMS), Volume 1, Supply Standards and Procedures

    c. The American Standard Code for Information Interchange,(ASCII) Character Set http://asciiset.com/

4. APPROVED CHANGE(S): Green highlighting identifies substantive updates subsequent to staffing.

    a. <u>**Brief Overview of Change:**</u> This change updates DLM 4000.25, Defense Logistics Management Standards (DLMS), to clarify which characters are and are not valid in DLMS EDI transactions.

    b. <u>**Background:**</u> Recent revisions to some DLMS implementation conventions (ICs) caused some trading partners to request clarification regarding which characters senders may convey in X12-

based DLMS EDI transactions, and under what circumstances receivers should consider those characters valid.

      (1) The X12 standard (X12.5 Interchange Control Structures—Reference 3.a.) defines the basic character set delineating the valid characters for use in an X12-compliant EDI data stream. The characters in the basic character set specified in X12 version/release 4010 are:

Basic Character Set	Character
Upper case letters	A-Z
Digits	0-9
Space	<space>
and Special Characters:	
Exclamation Mark	!
Double Quote	"
Ampersand	&
Single Quote	'
Open Parenthesis	(
Close Parenthesis	)
Asterisk	*
Plus Sign	+
Comma	,
Dash	-
Period	.
Forward Slash	/
Colon	:
Semi Colon	;
Question Mark	?
Equals sign	=

In addition to the characters from the basic character set, trading partners may use characters from an extended character set upon mutual prior agreement. Characters in that extended character set are:

Extended Character Set	Character
Lower case letters	a-z
Other Special Characters:	
Percent Sign	%

Extended Character Set	Character
At Sign	@
Open Square Bracket	[
Close Square Bracket	]
Underscore	_
Open Bracket	{
Close Bracket	}
Back Slash	\
Pipe (Vertical Bar)	|
Less Than	<
Greater Than	>
Tilde	~
and National Characters:	
Hash Sign	#
Dollar Sign	$

      (2) Characters that the sender chooses to use as X12 delimiters (identified by the sender in the ISA segment of each transaction) may not appear in the data stream of the EDI transaction under any circumstances.

      (3) Additionally, because DLMS supports translations between X12-based and XML-based DLMS transactions through the Defense Automatic Addressing System (DAAS), senders must not convey XML reserved characters in the data stream of X12-based DLMS transactions. XML reserved characters are defined by the World Wide Web Consortium XML Standard as follows:

XML Reserved Characters	Character
Quotation Mark	"
Ampersand	&
Apostrophe	'
Less-than Sign	<
Greater-than Sign	>

      (4) DOD defines some special characters (e.g., dash (-) and slash (/)) as valid for use in specific data element values (e.g., unique item identifiers). Because trading partners may legitimately convey these characters in their EDI data content, senders must not use these special characters as delimiters in DLMS transactions that may require the use of these characters in the transaction data. To avoid any possibility of this type of data collision, DLMS procedures do not allow the use of these DOD allowed special characters as delimiters in any X12-based DLMS transaction.

      c. Approved Change in Detail: Update DLMS guidance to clarify which characters senders may convey in a DLMS transaction and clarify the specific circumstances under which senders may

validly convey those characters. Senders must not use XML reserved characters in data content and must not use characters in data content that are routinely used as delimiters.

     d. Revisions to DLM 4000.25 Manuals: Update DLM 4000.25 Defense Logistics Management Standards (DLMS) (Reference 3.b.) Volume 1, Chapter 6 as shown in the enclosure.

     e. Transaction Flow: No change to any transaction flows.

     f. Alternatives: N/A

5. REASON FOR CHANGE: This change is required to clarify which characters senders may convey in X12-based DLMS EDI transactions, and under what circumstances it is valid to convey those characters.

6. ADVANTAGES AND DISADVANTAGES:

     a. Advantages:

        (1) Clarifies which characters senders may convey in X12-based DLMS transactions and under which circumstances those characters are valid, providing additional guidance to programmers and implementers of X12–based DLMS transactions.

        (2) Reduces the number of transactions that receivers will reject due to invalid characters in the X12–based DLMS data stream.

     b. Disadvantages: None

7. ESTIMATED TIME LINE/IMPLEMENTATION TARGET: This change does not affect DLMS procedures (only clarifies the existing guidance); it is effective upon release.

8. ESTIMATED SAVINGS/COST AVOIDANCE ASSOCIATED WITH IMPLEMENTATION OF THIS CHANGE: There is no cost avoidance dollar figure available, but this update will result in receivers rejecting fewer transactions due to invalid characters contained in the EDI data stream, which will reduce the amount of manual re-work required to fix and resend rejected transactions.

9. IMPACT:

     a. New DLMS Data Elements: None

     b. Changes to DLMS Data Elements: None

     c. Automated Information Systems (AIS): None

     d. Defense Automatic Addressing System (DAAS): None

     e. Non-DLM 4000.25 Series Publications: No known impacts

10. PDC 1275 RESPONSE/COMMENT TABLE:

Originator	Response/Comment	EBSO Response
USA (SDR)	Concur without comment.	Noted.

Originator	Response/Comment	EBSO Response
USN (SPRC, SDR, JPIWG, FPRC)	Concur without comment.	Noted.
USAF (SPRC, JPIWG)	Concur without comment.	Noted.
USAF (SDR)	Concur without comment.	Noted.
USMC	Concur without comment.	Noted.
USTRANSCOM	Abstains.	Noted.
DLA (SDR)	Concur without comment.	Noted.
DLA (Supply)	Concur without comment.	Noted.
DLA (JPIWG)	Concur without comment.	Noted.
DFAS	Concur without comment.	Noted.
GSA	Concur without comment.	Noted.
DAAS (SPRC)	Concur with comment. • Add hexadecimal 1D, 1F, 1C to the list of allowed characters, as they are the best choices from what the X12 standard suggests. • Represent Newline as 0D 0A (hex value) for clarity. • This change should give guidance on the preferred/recommended delimiters as outlined in the table below. _(table below)_	Comments accepted and incorporated.

Table within DAAS (SPRC) comment:

Delimiter		Preferred Characters	Meaning
Data element separator	<gs>	1D (hex value) * ~	Group separator Asterisk Tilde
Component element separator	<us>	1F (hex value) :	Unit separator Colon
Segment terminator	<tr>	1C (hex value) 0D 0A (hex value)	File separator Newline (Line Feed/Carriage Return)

Enclosure, DLM Revisions

Update DLM 4000.25 Defense Logistics Management Standards (DLMS) Volume 1, Chapter 6 as follows:

Additions shown in *red, bold, italicized* font.

       "C6.4.4.5. EDI fields and records are separated by delimiter characters. The delimiter for a field and the delimiter for a record are set externally by the Interchange Control Header (ISA) segment. This means, the EDI parser may not know what the delimiters will be until it has begun to parse the file. EDI handles this problem by making the first segment, ISA, fixed length and defining the delimiters in the ISA segment of the EDI interchange. In an actual interchange, ASCII Hexadecimal characters are used, a graphic representation is used for print examples.

       C6.4.4.5.1. <u>Delimiters</u>. In ASC X12 EDI interchanges *(Releases 4010 and 4030)*, there are three delimiters. The delimiters cannot appear as a value in the business transaction; otherwise the syntax rule will fail.

       C6.4.4.5.1.1. <u>Data Element Separator</u>. The first delimiter is the data element separator. This defines the delimiter between each field within the record. This character will likely be the most common character used for any given EDI file.

       C6.4.4.5.1.2. <u>Component Element Separator</u>. The second, and least commonly used, is the component element separator. ASC X12 supports the use of sub-elements in transactions employing a Composite data element such as in the Unit of Measure (MEA) and Reference (REF) segments. The component element separator delimits the sub-elements.

       C6.4.4.5.1.3. <u>Segment Terminator</u>. Lastly, the segment terminator defines the end of each segment within the transaction.

       C6.4.4.5.*2*. <u>EDI Interchange and Delimiter Example</u>. Figure C6.F4. shows an example of the EDI data in an interchange that includes the delimiters.

Figure C6.F4. <u>ASC X12 Delimiters</u>

```
ISA*00*        *00*        *01*1515151515    *01*5151515151
*041201*1217*U*00403*000032123*0*P*|*~
GS*CT*9988776655*1122334455*20041201*1217*128*X*004030~
ST*831*00128001~
BGN*00*88200001*20041201~
N9*BT*88200001~
TRN*1*88200001~
RCD*1*20*EA|2|1~
AMT*2*100000.00~
QTY*46*1~
SE*8*00128001~
GE*1*128~
IEA*1*000032123~
```

Data Element Separator = * (Asterisk). Defined in the fourth position of the ISA Segment
Component Element Separator = | (Pipe (Vertical Bar)). Defined in the 3rd to last position of ISA segment
Segment Terminator = ~ (Tilde). First occurrence defines the segment termination

C6.4.4.6. Special Character Use in DLMS Transaction

C6.4.4.6.1. XML Reserved Characters. DLMS develops and publishes XML schemata (paragraph C6.5.) that are equivalent to the X12-based DLMS ICs. Because the W3C XML standard defines a number of reserved characters that senders may not convey in the XML data element values, senders of X12-based transactions also may not convey these characters in DLMS X12-based transactions as data element values, because they will result in errors if the X12-based transactions are translated to XML.

C6.4.4.6.2. DoD Allowed Special Characters. DoD has identified a number of special characters as valid for use in specific DoD data values, (e.g., the dash (-) and the slash (/) characters are valid in a unique item identifier). Because trading partners may legitimately convey these characters in their EDI data content, senders must not use these special characters as delimiters in DLMS transaction that may require the use of these characters in the transaction data. To avoid any possibility of this type of data collision, DLMS procedures do not allow the use of these DoD allowed special characters as X12 EDI delimiters in any DLMS transactions. Table C6.T3, Special Characters Allowed as Delimiters in X12-based DLMS Transactions, lists the characters that are valid for use as X12 delimiters in DLMS transactions. Senders may choose delimiters from among this list and encode those delimiters in the ISA segment of the DLMS transactions they send. Table C6.T4, Preferred Special Characters as Delimiters for use in X12-based DLMS Transactions, lists the special characters that are preferred for use by type of delimiter.

C6.4.4.6.3. In addition to the above, see Volume 2, Chapter 17 for SDR special character exceptions/inclusions.

Table C6.T3 – Special Characters Allowed as Delimiters in X12-based DLMS Transactions

Authorized Characters	*Meaning*
!	*Exclamation Mark*
"	*Double Quote*
&	*Ampersand*
'	*Single Quote*
*	*Asterisk*
:	*Colon*
%	*Percent Sign*
_	*Underscore*
{	*Open Bracket*
}	*Close Bracket*
|	*Pipe (Vertical Bar)*
<	*Less Than*
>	*Greater Than*
~	*Tilde*
^	*Caret*

Authorized Characters	Meaning
1D (hex value)	Group Separator[1]
1F (hex value)	Unit Separator[2]
1C (hex value)	File Separator[3]
0D 0A (hex value)	Newline[4] (Line Feed/Carriage Return)

Table C6.T4 – Preferred Special Characters as Delimiters in X12-based DLMS Transactions

Delimiter Type		Preferred Character	Meaning
Data Element Separator	\<gs\>	1D (hex value)	Group Separator
		*	Asterisk
		~	Tilde
Component/Composite Element Separator	\<us\>	1F (hex value)	Unit Separator
		:	Colon
Segment Terminator	\<tr\>	1C (hex value)	File Separator
		0D 0A (hex value)	Newline (Line Feed/Carriage Return)

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[1] *Group Separator is an unprintable character; senders may use it only as a data element separator in X12 transactions.*
[2] *Unit Separator is an unprintable character; senders may use it only as a component element separator.*
[3] *File Separator is an unprintable character; senders may use it only as a segment terminator.*
[4] *Newline is an unprintable character; senders may use it only as a segment terminator.*