TMSS Parsing Test

MIL-M-9977J, Appendix J, NATO Stage B Cross-Servicing Checklist (CL2)

Document Type Definition

MAXIMA Corporation

DISA Contract #DCA100-93-D-0065

Quick Short Test Report

24 June 1994

Prepared for
Electronic Systems Center
Air Force CALS Program Office
HQ ESC/AV-2
4027 Colonel Glenn Hwy Suite 300
Dayton OH 45431-1672

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24 June 1994

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Air Force CALS Test Bed

Notification of Test Results

24 June 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

MAXIMA Corporation

Identified as follows:

Title: MIL-M-9977J, Appendix J, NATO Stage B Cross-Servicing Checklist (CL2), DTD Parsing Test
Program: DISA
Program Office: DISA
Contract No.: DCA100-93-D-0065
QSTR No.: AFCTB-ID 94-091

Received on the following media: 3.5" Diskette

The results of the QSTR evaluation are as follows:

MIL-STD-1840A Media Format: N/A
MIL-D-28000A IGES: N/A
MIL-M-28001B SGML: Fail
MIL-R-28002A Raster: N/A
MIL-D-28003 CGM: N/A

Formal results with associated disclaimer are documented and available from the AFCTB.

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Contents

1. Introduction..................................................1
   1.1. Background..............................................1
   1.2. Purpose................................................2
2. Test Parameters..............................................3
3. 1840A Analysis..............................................4
   3.1. External Packaging.....................................4
4. SGML Analysis..............................................4
   4.1. Exoterica Validator....................................6
   4.2. Exoterica XGML Normalizer.............................6
   4.3. Public Domain sgmls..................................7
   4.4. Sema Mark-it...........................................7
5. Conclusions and Recommendations...........................8
6. Appendix A - Detailed SGML Analysis.......................9
   6.1. Exoterica Validator....................................9
   6.2. Public Domain sgmls Log..............................12
   6.3. Sema Mark-it Parser Log..............................15
   6.4. D977JJ0.ORG...........................................16
1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.
1.2 Purpose

The purpose of this informal test is to analyze Air Force Document Type Definitions (DTDs) for Standard Generalized Markup Language (SGML) syntax, using several commercial and public domain SGML parsers, prior to placing them in the Defense Information Systems Agency (DISA) Asset Source for Software Engineering Technology (ASSET) repository.
2. Test Parameters

Test Plan: AFCTB 94-091

Date of Evaluation: 24 June 1994

Evaluator: George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data Originator: Kay Hill
MAXIMA Corporation
2372 Lakeview Drive
Beavercreek OH 45431
(513) 427-5888

Data Description: Technical Manual Test
1 DTD

Data Source System:

Text/SGML SOFTWARE
Unknown

Evaluation Tools Used:

MIL-M-28001 (SGML)
PC 486/50
Exoterica XGMLNormalizer v1.2e3.2
Exoterica Validator v2.2 exl
McAfee & McAdam Sema Mark-it v2.3
Public Domain sgmls 1.1

Standards Tested: MIL-M-28001B
3. 1840A Analysis

3.1 External Packaging

The 3.5" diskette was hand delivered to the Air Force CALS Test Bed (AFCTB). It was not enclosed in any type of container.

The files received by the AFCTB were not MIL-STD-1840A. The files were not named per the standard conventions, as the stated purpose of the evaluation was the basic data structure.

4. SGML Analysis

The AFCTB has several parsers available for evaluating submitted DTD and text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report.

The goal was to configure the DTD under analysis as it would normally be used. However, for this analysis it was necessary to modify the DTD adding the "DOCTYPE doc [" statement to the start and the companion "]>" to the end of the DTD under evaluation, as stated in the comments of the DTD. If the parser did not support a formal file pointing to the location of the ISO character sets, this was added.

The DTD under evaluation, MIL-M-9977J, Appendix J, NATO Stage B Cross-Servicing Checklist (CL2), called a sequence of companion DTDs, each in turn, as illustrated by the diagram below. These DTDs were delivered on the same diskette as the DTD to be evaluated. The DTDs were not changed except to point to the succeeding DTD in the sequence and to insert the location of the ISO character set files in the D784CB0.A3 DTD.
MIL-M-9977J NATO Stage B Cross-Servicing Checklist (CL2) DTD

D977JJ0.ORG ➔ D096EF0.ORG ➔ D784CB0.A3
       ➔ D977JA0.ORG ➔ D784CB0.A3

It was noted during the visual inspection of the provided D977JJ0.ORG DTD, that the normal end of file marker was not present. This may indicate an incomplete DTD.

The following notes apply to the parsing analysis as indicated in the ensuing paragraphs.

Note 1. Entity parameters defined more than once is a valid SGML construct. The duplicate definition errors and/or warnings in this analysis do not indicate any problems.

Note 2. Some of the parsers report mixed content model warnings. The use of such content models is normally unnecessary and therefore not normally recommended. Record boundaries within elements of associated instances may be misinterpreted where a mixed content model exists in the DTD.

Note 3. The occurrences of warnings "references defined, but not used," appeared because portions of the called DTD, i.e., MIL-M38784C, were not used. They were not used because the entity definitions of the DTD under analysis altered the execution path in the called DTD. The warnings in this analysis do not indicate any problems.
4.1 Exoterica Validator

The DTD file was evaluated using the Exoterica Validator ext parser. The basic DTD was modified by placing the concrete syntax file and "<!DOCTYPE doc [" at the start and the "]>" at the end. No errors were reported by the parser.

The parser reported 32 total warnings of two types. The first type warning was a parameter entity declared more than once. See Note 1 above.

<!-- **Warning** in "c:\ws\096e.org" (entity "%m5096cl"), line 31,
    used in "\xgml\9491.dtd", line 141:
    A parameter entity name has been declared more than once.
    The entity is "%frnt".
    <!ENTITY % frnt "(idinfo, lep, verstat?, contents, illuslist?, tabl-
    ist?,
    ----
    -->

The second type warning related to elements defined but not used in any content model. See Note 3 above.

<!-- **Warning** in "\xgml\9491.dtd", line 185:
    An element is not allowed in the document instance because it does not
    appear in any accessible content model or it is completely excluded.
    The element is "ACCPREP".
    -->

4.2 Exoterica XGML Normalizer

The DTD file was parsed using the Exoterica XGMLNormalizer parser. The concrete syntax and "<!DOCTYPE doc [" were added to the start and "]>" to the end of the file. No errors or warnings were issued by this utility.
4.3 Public Domain sgmls

The DTD file was evaluated using the Public Domain sgmls v1.1 parser. The file was modified by adding the "<!DOCTYPE doc [" to the start and "]>" to the end of the file as stated in the comments in the DTD. File D784CB0.A3 location was inserted into the DTD. No errors were reported by the parser.

The parser reported 32 total warnings of the same type. The warning was duplicate definitions. See Note 1 above.

sgmls: In file included at \ws\9491.dtd, line 69:
Warning at c:\ws\096e.org, line 32 in declaration parameter 4:
Duplicate specification occurred for "frnt"; duplicate ignored

4.4 Sema Mark-it

The DTD file was evaluated using McAfee & McAdam's Sema Mark-it v2.3 parser. The file was modified by adding the concrete syntax and "<!DOCTYPE doc [" to the start and "]>" to the end of the file. An error was reported in an external reference. When this was checked, it was found to be an error in the provided DTD. The DTD reference was MIL-M-9977I NBL when it should have been to MILM9977J.

<!ENTITY & mnucbasld PUBLIC "-//USA-DOD//DTD MIL-M-9977I NBL//EN" >
5. Conclusions and Recommendations

The file D977JJ0.ORG, MIL-M-9977J, Appendix J, NATO Stage B Cross-Servicing Checklist (CL2) does not meet the CALS MIL-M-28001B specification, because of the incorrect external reference.

The errors, warnings, and comments reported by the parsers used in this evaluation do not indicate invalid SGML syntax.

Recommend the DTD be changed to eliminate the mixed content model. If this is not possible, users should be alerted to the potential problems that may occur in the application of the DTD, and proper guidance should be provided users to avoid the potential problems in the use of this DTD.
6. Appendix A - Detailed SGML Analysis

6.1 Exoterica Validator

<!-- **Warning** in "c:\ws\096e.org" (entity "%m5096cl"), line 31,
    used in "\xgml\9491.dtd", line 141:
    A parameter entity name has been declared more than once.
The entity is "%frnt".
<!ENTITY % frnt "(idinfo, lep, verstat?, contents, illuslist?, tablelist?,

-->
The entity is "%shortitleuse".
The entity is "%shortitle".
The entity is "%bodyele".

<!-- **Warning** in "i:\dt\784c.dtd" (entity "%m38784c"), line 37,
    used in "c:\ws\096e.org" (entity "%m5096cl"), line 80,
    used in "\xgml\9491.dtd", line 141:
    A parameter entity name has been declared more than once.
The entity is "%shortitleuse".
<!ENTITY % shortitleuse "IGNORE" >

-->
The entity is "%shortitle".
The entity is "%frnt".
The entity is "%titles".
The entity is "%step1con".
The entity is "%step2con".
The entity is "%step3con".
The entity is "%step4con".
The entity is "%step5con".
The entity is "%step6con".
The entity is "%step7con".
The entity is "%bodyele".
The entity is "%chap".

<!-- **Warning** in "c:\ws\977j.dtd" (entity "%mnucbasld"), line 29,
    used in "\xgml\9491.dtd", line 141:
    A parameter entity name has been declared more than once.
The entity is "%bodyele".
<!ENTITY % bodyele ">(basinfo, bomweapld, practbl)" >

-->
The entity is "%clno".
The entity is "%shortitleuse".
The entity is "%shortitle".
The entity is "#titles".
The entity is "#un11".
The entity is "#lpl".
The entity is "#sect".
The entity is "#frnt".
The entity is "#nparcon".
The entity is "#plauch".
The entity is "#gproc".
The entity is "#tkl".
The entity is "#ssr".
The entity is "#un12".

<!-- **Warning** in "\xgml\9491.dtd", line 185:
An element is not allowed in the document instance because it does not
appear in any accessible content model or it is completely excluded.
The element is "ACCFPREP".
-->
The element is "ACCFPREP".
The element is "AIRDESC".
The element is "AIRPREP".
The element is "AIRPREPLD".
The element is "APPENDIX".
The element is "BASINFO".
The element is "BOMBWEAPSECT".
The element is "BOMBWEAPDESC".
The element is "BOMWEAPPLD".
The element is "CHAPTER".
The element is "CHGINSSHT".
The element is "CHGLIST".
The element is "CHGREC".
The element is "DDCHAPTER".
The element is "DDESC".
The element is "DDINDEX".
The element is "DDINTRO".
The element is "DDLIST".
The element is "DDSHEET".
The element is "DEPLOY".
The element is "DLAYFLT".
The element is "DOC".
The element is "DOCCL".
The element is "DOCNUCASLD".
The element is "DOCPART".
The element is "EMERGPROC".
The element is "FCTFUNCCHK".
The element is "FERRYPROC".
The element is "FOLDSECT".
The element is "GENERAL".
The element is "GENSAFREQ".
The element is "GLOSSARY".
The element is "ILLUSLIST".
The element is "INDEX".
The element is "INSERTPG".
The element is "INTRO".
The element is "LOAD".
The element is "LOADPREP".
The element is "NONSTRTOASTR".
The element is "PGNO".
The element is "PRACTBL".
The element is "PRACTBLSECT".
The element is "PREFACE".
The element is "RACKLOAD".
The element is "REAR".
The element is "REMOVEPG".
The element is "SCOPE".
The element is "SECTION".
The element is "SHORTTITLE".
The element is "STRAYVOLTCHECK".
The element is "STRNONSTR".
The element is "SUPPEQDESC".
The element is "SUPPEQUIPDESC".
The element is "TABLELIST".
The element is "VOLUME".
The element is "WARNPAGE".

--> Capacity points/limits:
   TOTALCAP =166968/200000
   ENTCAP  =13760/200000
   ENTCAP   =14761/70000
   ELEMCAP  =6304/70000
   GRPCAP   =35872/70000
   EXGRPCAP =960/70000
   EXNMPCAP =1856/70000
   ATTCAP   =67712/200000
   ATTCAP   =1708/70000
   AVGRCAP  =23776/70000
   NOTCAP   =96/70000
   NOTCHCAP =163/70000
   IDCAP    =0/70000
   IDREFCAP =0/70000
   MAPCAP   =0/70000
   LKSETCAP =0/70000
   LKNMCAP  =0/70000

--> 0 errors and 90 warnings reported. -->
6.2 Public Domain sgmls Log

sgmls: In file included at \ws\9491.dtd, line 69:
  Warning at c:\ws\096e.org, line 32 in declaration parameter 4:
  Duplicate specification occurred for "%frnt"; duplicate ignored

sgmls: In file included at \ws\9491.dtd, line 69:
  Warning at c:\ws\096e.org, line 34 in declaration parameter 4:
  Duplicate specification occurred for "%shorttitleuse"; duplicate ignored

sgmls: In file included at \ws\9491.dtd, line 69:
  Warning at c:\ws\096e.org, line 42 in declaration parameter 4:
  Duplicate specification occurred for "%shorttitle"; duplicate ignored

sgmls: In file included at \ws\9491.dtd, line 69:
  In file included at c:\ws\096e.org, line 80:
  Warning at i:\dtd\784c.dtd, line 37 in declaration parameter 4:
  Duplicate specification occurred for "%shorttitleuse"; duplicate ignored

sgmls: In file included at \ws\9491.dtd, line 69:
  In file included at c:\ws\096e.org, line 80:
  Warning at i:\dtd\784c.dtd, line 109 in declaration parameter 4:
  Duplicate specification occurred for "%frnt"; duplicate ignored

sgmls: In file included at \ws\9491.dtd, line 69:
  In file included at c:\ws\096e.org, line 80:
  Warning at i:\dtd\784c.dtd, line 126 in declaration parameter 4:
  Duplicate specification occurred for "%titles"; duplicate ignored

sgmls: In file included at \ws\9491.dtd, line 69:
  In file included at c:\ws\096e.org, line 80:
  Warning at i:\dtd\784c.dtd, line 139 in declaration parameter 4:
  Duplicate specification occurred for "%step1con"; duplicate ignored

sgmls: In file included at \ws\9491.dtd, line 69:
  In file included at c:\ws\096e.org, line 80:
  Warning at i:\dtd\784c.dtd, line 142 in declaration parameter 4:
  Duplicate specification occurred for "%step2con"; duplicate ignored

sgmls: In file included at \ws\9491.dtd, line 69:
  In file included at c:\ws\096e.org, line 80:
  Warning at i:\dtd\784c.dtd, line 145 in declaration parameter 4:
  Duplicate specification occurred for "%step3con"; duplicate ignored

sgmls: In file included at \ws\9491.dtd, line 69:
  In file included at c:\ws\096e.org, line 80:
  Warning at i:\dtd\784c.dtd, line 148 in declaration parameter 4:
  Duplicate specification occurred for "%step4con"; duplicate ignored
TOTALCAP 165617
ENTCAP 13760
ENTCHCAP 13378
ELEMCPA 6304
GRPCAP 35872
EXGRPCAP 992
EXNMCAP 1856
ATTCPA 67712
ATTCHCAP 1708
AVGRPCAP 23776
NOTCAP 96
NOTCHCAP 163
IDCAP 0
IDRFCAP 0
MAPCAP 0
LKSETCAP 0
LKNMCPA 0
6.3 Sema Mark-it Parser Log

ATTcnt --100-- 48
ATTSPlen --960-- 0
BseqLen --960-- 0
DTAGlen --16-- 0
DTEMPLEN --16-- 0
ENTLVL --16-- 3
GrpCnt --32-- 22
GrpGTCNT --96-- 27
GrpPLVL --16-- 5
LITLEN --3048-- 747
NAMELEN --32-- 13
NORMSEP --2-- 0
PILEN --240-- 0
TAGLEN --960-- 0
TAGLVL --24-- 0
MSDLVL --24-- 1
TOTALCAP --200000-- 174646
ETNCAP --200000-- 16992
ENTCHCAP --70000-- 13450
ELEMcap --70000-- 6304
GRPCAP --70000-- 41600
EXGRPCAP --70000-- 992
EXNMcap --70000-- 1856
ATTCap --200000-- 67712
ATTCap --70000-- 1708
AVGRPCAP --70000-- 23776
NOTCAP --70000-- 96
NOTCHCAP --70000-- 160
IDCAP --70000-- 0
IDREFCAP --70000-- 0
MAPCAP --70000-- 0
LKSETCAP --70000-- 0
LKNMcap --70000-- 0
6.4 **D977J10.ORG**

<!-- *********************** START OF FILE ************************ -->

<!-- SUPPLEMENT NOTICE: This file is made available to provide the user with
a digital representation of the DTD found in Appendix D of MIL-M-5096E.
This file is incomplete without MIL-M-5096E. -->

<!-- NOTE: The start and end of this file are marked with a row of asterisks.
If these rows are not present the file may not be complete! -->

<!-- MIL-M-9977J NATO Stage B Cross-Servicing Checklist (CL2 and subsequent)
DTD -->

<!-- The following set of declarations may be referred to by
using a public entity as follows:

<!ENTITY % mcl2cl PUBLIC "-//USA-DOD//DTD MIL-M-9977J CL2//EN" >
%mcl2cl; -->

<!-- NOTE: In order to parse the following DTD subset alone,
append the following statement to the beginning of the file:

<!DOCTYPE doccl2cl [
and the associated "]" to the end of the file. -->

<!-- ENTITY DECLARATIONS -->

<!ENTITY % mnucbasld PUBLIC "-//USA-DOD//DTD MIL-M-9977I NBL//EN" >

<!ENTITY % bodyele "(genproc, loadproc, unloadproc)" >

<!ENTITY % shortitleuse "IGNORE" >

<![ %shortitleuse; [
<!ENTITY % shortitle ", shorttitle?" >
]]>
<!ENTITY % shortitle " " >

<!ENTITY % titles "title %shortitle;" >

<!ENTITY % gproc "(#titles; suppequip, specsafreq) " >
<!ELEMENT storload (o (task+))>
<!ATTLIST storload
tocentry %yesorno; "1"
shortentry %yesorno; "0"
%bodyatt;
%secur;>

<!ELEMENT suppequip (o (%ssr;))>
<!ATTLIST suppequip
tocentry %yesorno; "1"
shortentry %yesorno; "0"
verified %yesorno; "0"
%bodyatt;
%secur;>