



AFCTN Test Report 94-120

AFCTB-ID
94-060



TMSS Parsing Test

MIL-M-83495A, Appendix D,



Fault Isolation,

Document Type Definition



MAXIMA Corporation

DISA Contract #DCA100-93-D-0065



Quick Short Test Report

DTIC
SELECTED
OCT 24 1995
G

CLEARED
FOR OPEN PUBLICATION

JUL 24 1995 18

23 May 1994

This is a
SAF/PAS document.

95-0610

Call: 73222/78932
for pickup or
return to 5D227

DIRECTORATE FOR FREEDOM OF INFORMATION
AND SECURITY REVIEW (OASD-PA)
DEPARTMENT OF DEFENSE

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.

AFMC 95-184

19951023 027



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

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

11-1-707

AFCTN Test Report
94-120

AFCTB-ID
94-060

**TMSS Parsing Test
MIL-M-83495A Appendix D, Fault Isolation
Document Type Definition
For:
MAXIMA Corporation
DISA Contract #DCA100-93-D-0065**

Quick Short Test Report

23 May 1994

Prepared By
Air Force CALS Test Bed
Wright-Patterson AFB, OH 45433

AFCTB Contact
Gary Lammers
(513) 427-2295

AFCTN Contact
Mel Lammers
(513) 427-2295

Accession For	
NTIS CRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution /	
Availability Codes	
Dist	Avail and/or Special
A-1	

DISCLAIMER

This document was prepared as an account of the work sponsored by the Air Force. Neither the United States Government, the Air Force, nor any of their employees makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, nor represents that its use would not infringe on privately owned rights. Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or the Air Force. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or the Air Force, and shall not be used for advertising or product endorsement purposes.

Available to the public from the
National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

This report and those involved in its preparation do not endorse any product, process, or company stated herein. Use of these means by anyone does not imply certification by the Air Force CALS Test Network (AFCTN).

Air Force CALS Test Bed

Notification of Test Results

23 May 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-83495A Appendix D, Fault Isolation, DTD Parsing Test
Program:	DISA
Program Office:	DISA
Contract No.:	DCA100-93-D-0065
QSTR No.:	AFCTB-ID 94-060

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:	Pass
MIL-R-28002A Raster:	N/A
MIL-D-28003 CGM:	N/A

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

Air Force CALS Test Bed
HQ ESC/AV-2P
4027 Colonel Glenn Highway, Suite 300
Dayton, OH 45431-1672
Phone: 513-257-3085 FAX: 513-257-5881

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.....	5
4.2.	Exoterica XGML Normalizer.....	6
4.3.	Public Domain sgmls.....	6
5.	Conclusions and Recommendations.....	7
6.	Appendix A - Detailed SGML Analysis.....	8
6.1.	Exoterica Validator	8
6.2.	Exoterica XGMLNormalizer Parser.....	12
6.3.	Public Domain sgmls Log.....	12

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 94-060

Date of Evaluation: 23 May 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.exe
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), and was not enclosed in any kind of container.

The files received by the AFCTB were not MIL-STD-1840A files. 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-83495A, Appendix D, Fault Isolation, called for a companion MIL-M-38784C DTD. MIL-M-38784C, Amendment three DTD, delivered on the same diskette as the DTD to be evaluated, was used. This DTD was used without change except to insert the location of the ISO character set files.

<!-- MIL-M-83495A Fault Isolation DTD -->

D495AD0.ORG --> D495AE0.ORG --> D784CB0.A3

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 warnings and/or errors 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 *exl* parser. The basic DTD was modified by placing the concrete syntax file and "`<!DOCTYPE doc ["` at the start and the `"]>`" at the end. The parser reported 100 errors which related to the missing instance and are not considered errors for this analysis.

The parser reported 35 total warnings of three types. The first type warning was for a parameter entity declared more than once. See Note 1 above.

```
<!-- **Warning** in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 39,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%shortitleuse".
      <!ENTITY % shortitleuse "ignore" >
      .....
```

The second type warning relates to mixed content models. See Note 2 above.

```
<!-- **Warning** in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 66,
      used in "\xgml\9460.dtd", line 139:
      An element with mixed content should permit data characters
      ("#PCDATA")
      everywhere.
      The element being declared is "CBLOC".
      <!ELEMENT cbloc      - o (%text;, cb+) >
                                   /\
```

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

```
<!-- **Warning** in "\xgml\9460.dtd", line 179:
      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 "ADDRESS".
```

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* parser version 1.1. 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. The D495AE0.ORG and D784CB0.A3 files were used as the pointed to files. Fourteen warnings were reported by the parser, all of which were duplicate definitions. See Note 1 above.

```
sgmls: In file included at \ws\9460.dtd, line 66:
      Warning at c:\ws\495fr.dtd, line 39 in declaration parameter 4:
      Duplicate specification occurred for "%shorttitleuse"; duplicate
      ignored
```

5. Conclusions and Recommendations

The file D495AD0.ORG, MIL-M-83495A, Appendix D, conforms to the SGML syntax of ISO Standard 8879, as required by the CALS MIL-M-28001B specification.

The errors, warnings, and comments reported by the parsers used in this evaluation do not indicate invalid SGML syntax. However, the mixed content model flagged by a warning, from one of the four parsers, may cause problems in the use of this DTD. See Note 2, Section 4 above.

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 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\495fr.dtd" (entity "%m83495fr"), line 39,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%shortitleuse".
      <!ENTITY % shortitleuse "ignore" >
      .....
```

-->

```
<!-- **Warning** in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 47,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%shortitle".
      <!ENTITY % shortitle " " >
      .....
```

-->

```
<!-- **Warning** in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 49,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%chap".
      <!ENTITY % chap "(title %shortitle;; chaptoc, faultid, logbook)" >
      .....
```

-->

```
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 37,
      used in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 51,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%shortitleuse".
      <!ENTITY % shortitleuse "IGNORE" >
      .....
```

-->

```
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 45,
      used in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 51,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%shortitle".
      <!ENTITY % shortitle " " >
      .....
```

-->

```
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 107,
      used in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 51,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%frnt".
      <!ENTITY % frnt "(idinfo, warnpage?, chginsht?, lep, verstat?,
      ....
```

```
-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 138,
      used in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 51,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%step1con".
      <!ENTITY % step1con "(warning*, caution*, note*, para, note*),
      .....
```

```
-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 141,
      used in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 51,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%step2con".
      <!ENTITY % step2con "(warning*, caution*, note*, para, note*),
      .....
```

```
-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 144,
      used in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 51,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%step3con".
      <!ENTITY % step3con "(warning*, caution*, note*, para, note*),
      .....
```

```
-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 147,
      used in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 51,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%step4con".
      <!ENTITY % step4con "(warning*, caution*, note*, para, note*),
      .....
```

```
-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 150,
      used in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 51,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%step5con".
      <!ENTITY % step5con "(warning*, caution*, note*, para, note*),
      .....
```

```
-->
```

```
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 153,
      used in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 51,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%step6con".
      <!ENTITY % step6con "(warning*, caution*, note*, para, note*),
      .....
```

```
-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 156,
      used in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 51,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%step7con".
      <!ENTITY % step7con "(warning*, caution*, note*, para, note*)" >
      .....
```

```
-->
<!-- **Warning** in "i:\dtd\784c.dtd" (entity "%m38784c"), line 185,
      used in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 51,
      used in "\xgml\9460.dtd", line 139:
      A parameter entity name has been declared more than once.
      The entity is "%chap".
      <!ENTITY % chap "(%titles;, ((section, section+) | para0+),
      .....
```

```
-->
<!-- **Warning** in "c:\ws\495fr.dtd" (entity "%m83495fr"), line 66,
      used in "\xgml\9460.dtd", line 139:
      An element with mixed content should permit data characters ("#PCDATA")
      everywhere.
      The element being declared is "CBLOC".
      <!ELEMENT cbloc      - o (%text;, cb+) >
      /\
```

```
-->
<!-- **Warning** in "\xgml\9460.dtd", line 179:
      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 "ADDRESS".
```

```
-->
```

<<<< PART OF MESSAGE TEXT REMOVED HERE >>>>

The element is "APPENDIX".
The element is "CHGINSSHT".
The element is "CHGLIST".
The element is "CHGREC".
The element is "DOC".
The element is "DOCFRM".
The element is "DOCPART".
The element is "FOLDSECT".

The element is "GLOSSARY".
The element is "INDEX".
The element is "INSERTPG".
The element is "INTRO".
The element is "PREFACE".
The element is "REAR".
The element is "REMOVEPG".
The element is "SECTION".
The element is "SHORTTITLE".
The element is "VOLUME".
The element is "WARNPAGE".

<<<< ERRORS FROM THIS POINT ON RELATE TO NO DOCUMENT INSTANCE AND ARE NOT CONSIDERED FOR THIS REPORT >>>>

<!-- **Error** in "\xgml\9460.dtd", line 180:
The document instance must consist of at least one tag or data character.
The following element can start: "DOCFIM".
-->

<<<< PART OF LOG FILE REMOVED HERE >>>>

<!-- **Error** in "\xgml\9460.dtd", line 180:
An end tag that has been declared inomissible ("-") must not be omitted.
The element is "DOCFIM".
-->

<!-- Capacity points/limits:
TOTALCAP =116857/200000
ENTCAP =12832/200000
ENTCHCAP =11651/70000
ELEMCAP =5664/70000
GRPCAP =31136/70000
EXGRPCAP =768/70000
EXNMCAP =1344/70000
ATTCAP =34880/200000
ATTCHCAP =947/70000
AVGRPCAP =17376/70000
NOTCAP =96/70000
NOTCHCAP =163/70000
IDCAP =0/70000
IDREFCAP =0/70000
MAPCAP =0/70000
LKSETCAP =0/70000
LKNMCAP =0/70000
-->

<!-- 100 errors and 35 warnings reported. -->

6.2 Exoterica XGMLNormalizer Parser

No reported errors or warnings.

6.3 Public Domain sgmls Log

sgmls: In file included at \ws\9460.dtd, line 66:
Warning at c:\ws\495fr.dtd, line 39 in declaration parameter 4:
Duplicate specification occurred for "%shortitleuse"; duplicate ignored

sgmls: In file included at \ws\9460.dtd, line 66:
Warning at c:\ws\495fr.dtd, line 47 in declaration parameter 4:
Duplicate specification occurred for "%shortitle"; duplicate ignored

sgmls: In file included at \ws\9460.dtd, line 66:
Warning at c:\ws\495fr.dtd, line 49 in declaration parameter 4:
Duplicate specification occurred for "%chap"; duplicate ignored

sgmls: In file included at \ws\9460.dtd, line 66:
In file included at c:\ws\495fr.dtd, line 51:
Warning at i:\dtd\784c.dtd, line 37 in declaration parameter 4:
Duplicate specification occurred for "%shortitleuse"; duplicate ignored

sgmls: In file included at \ws\9460.dtd, line 66:
In file included at c:\ws\495fr.dtd, line 51:
Warning at i:\dtd\784c.dtd, line 45 in declaration parameter 4:
Duplicate specification occurred for "%shortitle"; duplicate ignored

sgmls: In file included at \ws\9460.dtd, line 66:
In file included at c:\ws\495fr.dtd, line 51:
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\9460.dtd, line 66:
In file included at c:\ws\495fr.dtd, line 51:
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\9460.dtd, line 66:
In file included at c:\ws\495fr.dtd, line 51:
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\9460.dtd, line 66:
In file included at c:\ws\495fr.dtd, line 51:
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\9460.dtd, line 66:
In file included at c:\ws\495fr.dtd, line 51:
Warning at i:\dtd\784c.dtd, line 148 in declaration parameter 4:
Duplicate specification occurred for "%step4con"; duplicate ignored

sgmls: In file included at \ws\9460.dtd, line 66:
In file included at c:\ws\495fr.dtd, line 51:

Warning at i:\dtd\784c.dtd, line 151 in declaration parameter 4:
Duplicate specification occurred for "%step5con"; duplicate ignored
sgmls: In file included at \ws\9460.dtd, line 66:
In file included at c:\ws\495fr.dtd, line 51:
Warning at i:\dtd\784c.dtd, line 154 in declaration parameter 4:
Duplicate specification occurred for "%step6con"; duplicate ignored
sgmls: In file included at \ws\9460.dtd, line 66:
In file included at c:\ws\495fr.dtd, line 51:
Warning at i:\dtd\784c.dtd, line 156 in declaration parameter 4:
Duplicate specification occurred for "%step7con"; duplicate ignored
sgmls: In file included at \ws\9460.dtd, line 66:
In file included at c:\ws\495fr.dtd, line 51:
Warning at i:\dtd\784c.dtd, line 186 in declaration parameter 4:
Duplicate specification occurred for "%chap"; duplicate ignored