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Telecommunications management network

Guidelines for Implementation Conformance Statement proformas for tML schemas

ITU-T Recommendation M.3031

TMN AND NETWORK MAINTENANCE: INTERNATIONAL TRANSMISSION SYSTEMS, TELEPHONE CIRCUITS, TELEGRAPHY, FACSIMILE AND LEASED CIRCUITS

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ITU-T Recommendation M.3031

Guidelines for Implementation Conformance Statement proformas for tML schemas

Summary

This Recommendation provides guidelines for defining Schema Implementation Conformance Statement (SICS) proformas for any tML-based interface information specifications. The Schema Implementation Conformance Statement (SICS) specifies how an implementation is conformant to the proformas defined for a tML schema definition.

Source

ITU-T Recommendation M.3031 was approved on 14 July 2004 by ITU-T Study Group 4 (2001-2004) under the ITU-T Recommendation A.8 procedure.

Keywords

eXtensible Markup Language, ICS proforma, Implementation Conformance Statement, telecommunications Markup Language, tML schema.

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

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ITU-T Recommendation M.3031

Guidelines for Implementation Conformance Statement proformas for tML schemas

1 Scope

This Recommendation provides guidelines for defining Schema Implementation Conformance Statement (SICS) proformas for any tML-based interface information specifications. The Schema Implementation Conformance Statement (SICS) specifies how an implementation is conformant to the proformas defined for a tML schema definition.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- [1] ITU-T Recommendation X.291 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – Abstract test suite specification*.
- [2] ITU-T Recommendation X.296 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – Implementation conformance statements*.
- [3] ITU-T Recommendation X.724 (1996) | ISO/IEC 10165-6:1997, *Information technology – Open Systems Interconnection – Structure of management information: Requirements and guidelines for implementation conformance statement proformas associated with OSI management*.
- [4] ITU-T Recommendation M.3030 (2002), *Telecommunications Markup Language (tML) framework*.
- [5] W3C, *eXtensible Markup Language (XML) 1.0 (Second Edition)*, 6 October 2000.
- [6] W3C, *XML Schema Part 0: Primer*, 2 May 2001.
- [7] W3C, *XML Schema Part 1: Structures*, 2 May 2001.
- [8] W3C, *XML Schema Part 2: Datatypes*, 2 May 2001.
- [9] W3C, *Namespaces in XML*, 14 January 1999.
- [10] W3C, *XML Path Language (XPath) Version 1.0*, 16 November 1999.

3 Definitions

3.1 Implementation conformance statements definitions

This Recommendation makes use of the following terms defined in ITU-T Rec. X.296 [2]:

- a) (ICS) item;
- b) (ICS) question;
- c) status (value);
- d) (support) answer.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations:

ICS	Implementation Conformance Statement
ITU-T	International Telecommunication Union – Telecommunication Standardization Sector
SICS	Schema Implementation Conformance Statement
tML	telecommunications Markup Language
W3C	World Wide Web Consortium
XML	eXtensible Markup Language

5 tML schema ICS proformas

tML schema is used as a template for defining tML-based interface information. The SICS proformas must express the tML schema features such as schema elements and attributes. This clause introduces the features of tML schema and specifies the SICS proformas according to these language features.

5.1 Schema overview

tML schemas [4] express shared vocabularies and allow machines to carry out rules made by people. They provide a means for defining the structures, contents and semantics of tML documents, and define the cardinality of an element (e.g., the number of its possible occurrences) with some precision. This element may or may not have attributes, text children and sub-elements. An ordered sequence of sub-elements shall be considered if the element contains sub-elements. The definition of the target namespace [9] and several default options can also be held. tML schemas use a reference to an element or an attribute somewhat comparable to cloning an object.

According to the schema syntax specifications [6][7][8], the containment relationship among these constructs can be illustrated as in Figure 5-1.

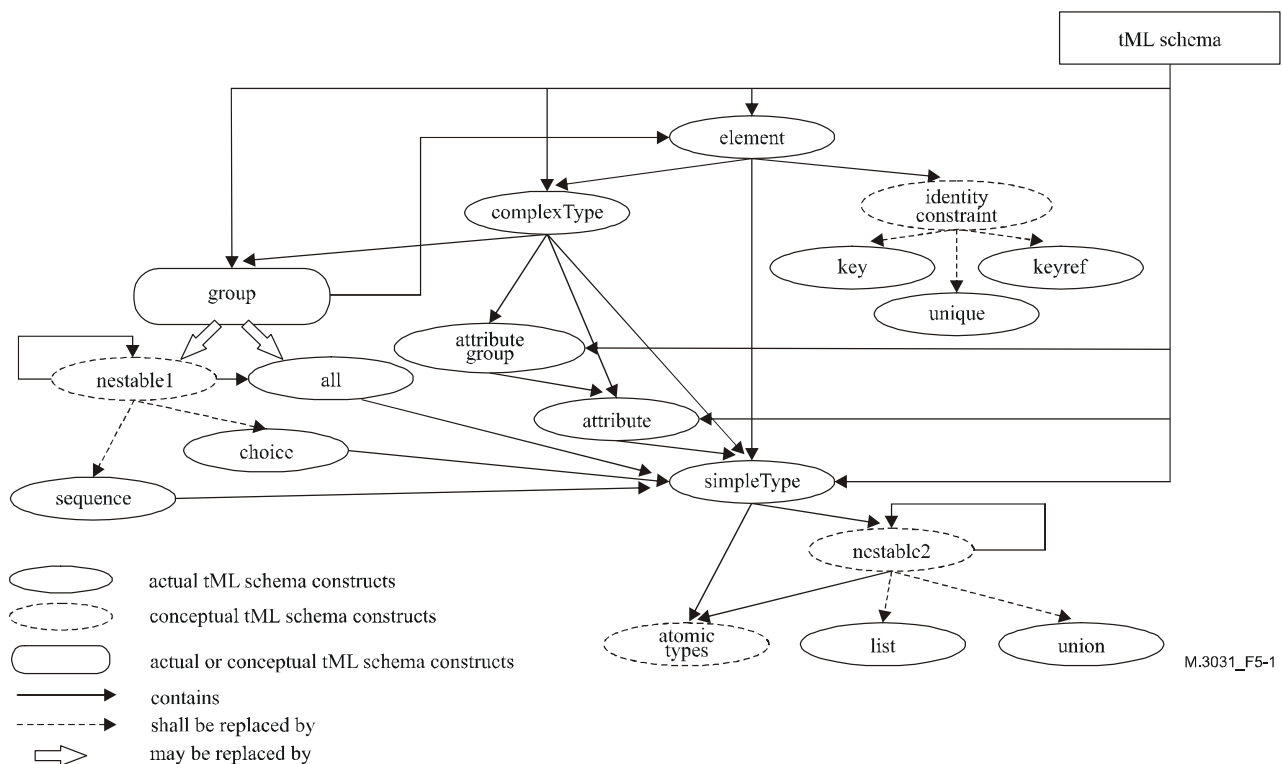


Figure 5-1/M.3031 – Containment relationship in tML schema specification

NOTE 1 – Figure 5-1 illustrates the schema constructs that are related to conformance statements. Some constructs, which have nothing to do with schema conformance, such as annotation, are not shown in this figure. A conceptual tML schema construct will always be replaced by an actual tML schema construct. The "group" can be viewed as either actual or conceptual tML schema constructs according to specific schema definitions. That is, "group" can appear as an individual construct, or may be replaced by another actual schema construct.

NOTE 2 – All tML built-in simple types can be found in 2.3 of W3C XML Schema Part 0: Primer [6], which can be used for replacement in the "atomic types" in Figure 5-1.

The ICS proformas must represent the relationships shown above.

5.2 Guidelines for specification of SICS proformas

Proforma specifications shall follow the style as documented in the following clauses. Proforma specifications shall provide the information required by this Recommendation. Additional tables may be included for other information, if needed.

There are three levels of documentation pertaining to SICS, namely:

- Guidelines or recommendation tools for the production of SICS proformas;
- A SICS proforma, associated with a standard related to tML-based network management. This is to be entered by a supplier of the implementation. A completed SICS proforma is a SICS;
- A SICS prepared by a supplier of the implementation as part of a conformance claim to a standard related to tML-based network management.

In the scope of this Recommendation, only the guidelines for item b are provided.