

SMPTE STANDARD

Uniform Resource Names for SMPTE Resources



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Foreword

SMPTE (the Society of Motion Picture and Television Engineers) is an internationally-recognized standards developing organization. Headquartered and incorporated in the United States of America, SMPTE has members in over 80 countries on six continents. SMPTE's Engineering Documents, including Standards, Recommended Practices and Engineering Guidelines, are prepared by SMPTE's Technology Committees. Participation in these Committees is open to all with a bona fide interest in their work. SMPTE cooperates closely with other standards-developing organizations, including ISO, IEC and ITU.

SMPTE Engineering Documents are drafted in accordance with the rules given in Part XIII of its Administrative Practices.

SMPTE 2029 was prepared by Technology Committee R30.

Intellectual Property

At the time of publication no notice had been received by SMPTE claiming patent rights essential to the implementation of this Standard. However, attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. SMPTE shall not be held responsible for identifying any or all such patent rights.

1 Scope

This standard defines the syntax of Uniform Resource Names (URN) for SMPTE resources. These URNs are intended to provide for the assignment of unique, permanent, and location-independent names for resources that SMPTE produces and manages.

2 Conformance Notation

Normative text is text that describes elements of the design that are indispensable or contains the conformance language keywords: "shall", "should", or "may". Informative text is text that is potentially helpful to the user, but not indispensable, and can be removed, changed, or added editorially without affecting interoperability. Informative text does not contain any conformance keywords.

All text in this document is, by default, normative, except: the Introduction, any section explicitly labeled as "Informative" or individual paragraphs that start with "Note:"

The keywords "shall" and "shall not" indicate requirements strictly to be followed in order to conform to the document and from which no deviation is permitted.

The keywords, "should" and "should not" indicate that, among several possibilities, one is recommended as particularly suitable, without mentioning or excluding others; or that a certain course of action is preferred but not necessarily required; or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.

The keywords "may" and "need not" indicate courses of action permissible within the limits of the document.

The keyword "reserved" indicates a provision that is not defined at this time, shall not be used, and may be defined in the future. The keyword "forbidden" indicates "reserved" and in addition indicates that the provision will never be defined in the future.

Unless otherwise specified the order of precedence of the types of normative information in this document shall be as follows. Normative prose shall be the authoritative definition. Tables shall be next, followed by formal languages, then figures, and then any other language forms.

3 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

ANSI/SMPTE 298M-1997, Television — Universal Labels for Unique Identification of Digital Data

SMPTE 330M-2004, Television — Unique Material Identifier (UMID)

IETF RFC 2141, Moats, R., "URN Syntax," May 1997.

IETF RFC 3406, Daigle, L., van Gulik, D.W., Iannella, R., Faltstrom, P. "Uniform Resource Names (URN) Namespace Definition Mechanisms," October 2002.

IETF RFC 4234, Crocker, D., Ed. and P. Overell, "Augmented BNF for Syntax Specifications: ABNF," October 2005.

4 Definition of Acronyms and Terms

- NID** Namespace ID, which identifies the namespace of a URN (defined by IETF RFC 2141)
- NSS** Namespace Specific String, which is the string after a NID and a colon in a URN (defined by IETF RFC 2141)
- UL** Universal Label (defined by ANSI/SMPTE 298M)
- UMID** Unique Material Identifier (defined by SMPTE 330M)
- URN** Universal Resource Name (defined by IETF RFC 2141)

5 Uniform Resource Name General Syntax (Informative)

IETF RFC 2141 defines the general syntax of URNs as:

<URN> ::= "urn:" <NID> ":" <NSS>

SMPTE URNs use the NID "smpte", which was defined by IETF RFC 5119 for registration in the IANA registry of URN NIDs.

Requirements for NSS syntax are constrained by IETF RFC 2141.

6 SMPTE URN Namespace Policies

All URNs in the SMPTE namespace shall conform to IETF RFC 3406.

In particular, URNs in the SMPTE namespace shall not be re-assigned, and URNs shall continue to be valid, even if the owners or registrants of the SMPTE resources identified by the URNs are no longer members or customers of SMPTE. There need not be resolution of such URNs, but they shall not resolve to false or stale information.

7 Uniform Resource Names for Universal Labels

7.1 UL URN NSS

The NSS of URNs for Universal Labels (ANSI/SMPTE 298M) shall begin with "ul:". The identifier structure for the Universal Label subnamespace (UL-NSS) described using Augmented Backus-Naur Form (IETF RFC 4234) shall be:

UL-NSS = "smpte:ul:" UL

UL = QUADBYTE *(DOT QUADBYTE)

DOT = "."

QUADBYTE = 4BYTE

BYTE = 2HEXDIG

The hexadecimal digits in the URN representation of ULs shall be the hexadecimal representation of the UL octets. The values of "UL" shall be constrained as defined in SMPTE 298M. Lexical equivalence of UL URNs shall be determined by an exact string match that is case-insensitive for alphabetical characters.

7.2 UL URN Examples (Informative)

The rules of section 5.1 result in a URN that has a defined preface of "urn:smpte:ul:" followed by a text string representation of the UL that expresses the first four bytes of the UL as a hexadecimal string, followed by one or more four-byte groups of the remainder of the UL, each represented as a hexadecimal string preceded by the "." symbol.

An example URN for a UL with three groups of four bytes is:

```
urn:smpte:ul:060a2b34.01010105.01010f20
```

An example URN for a UL with four groups of four bytes is:

```
urn:smpte:ul:060e2b34.04010103.04010202.01011100
```

8 Uniform Resource Names for Unique Material Identifiers

8.1 UMID URN NSS

The NSS of URNs for the Unique Material Identifier (SMPTE 330M) shall begin with "umid:".

The identifier structure for both the basic and the extended Unique Material Identifier subnamespace (UMID-NSS) described using Augmented Backus-Naur Form (IETF RFC 4234) shall be:

```
UMID-NSS = "smpte:umid:" UMID
```

```
UMID = QUADBYTE *(DOT QUADBYTE)
```

```
DOT = "."
```

```
QUADBYTE = 4BYTE
```

```
BYTE = 2HEXDIG
```

The hexadecimal digits in the URN representation of UMIDs shall be the hexadecimal representation of the UMID octets respectively. The values of "UMID" shall be constrained as defined in SMPTE 330M. Lexical equivalence of UMID URNs shall be determined by an exact string match that is case-insensitive for alphabetical characters.

Note: There are existing files that include URN UMID values that do not contain the "." symbol. Implementers are encouraged to accept URN UMID of this form.

8.2 UMID URN Examples (Informative)

In the case of a basic UMID, the rules of section 8 result in a URN that has a defined preface of "urn:smpte:umid:" followed by a text string representation of the UMID that expresses the 32 bytes of the UMID with the first four bytes represented as 8 hexadecimal characters, followed by four-byte groups of the remainder of the UMID, each represented as 8 hexadecimal characters preceded by the "." symbol.

An example URN for a basic UMID is:

urn:smpte:umid:060A2B34.01010105.01010D20.13000000.D2C9036C.8F195343.AB7014D2.D718BFDA

or

urn:smpte:umid:060a2b34.01010105.01010d20.13000000.d2c9036c.8f195343.ab7014d2.d718bfda

In the case of an extended UMID, the rules of section 8 result in a URN that has a defined preface of "urn:smpte:umid:" followed by a text string representation of the UMID that expresses the 32 bytes of the basic UMID with the first four bytes represented as 8 hexadecimal characters, followed by four-byte groups of the remainder of the basic UMID, each represented as a 8 hexadecimal characters preceded by the "." symbol. This is followed by the "." symbol which is then followed by the 32 bytes of the remainder of the extended UMID with the first four bytes expressed as 8 hexadecimal characters, followed by four-byte groups of the remainder of the extended UMID, each represented as 8 hexadecimal characters preceded by the "." symbol.

An example URN for an extended UMID is:

urn:smpte:umid:060A2B34.01010105.01010D43.33000000.8DC70900.63430597.08004602.0118276E.47E37102.63430597.00000000.00000000.00000000.4A502020.534F4E59.50445720

or

urn:smpte:umid:060a2b34.01010105.01010d43.33000000.8dc70900.63430597.08004602.0118276e.47e37102.63430597.00000000.00000000.00000000.4a502020.534f4e59.50445720

Annex A (Informative)
Bibliography

IETF RFC 1737, Sollins, K. and L. Masinter, "Functional Requirements for Uniform Resource Names," December 1994.

IETF RFC 5119, Edwards, T, "A Uniform Resource Name (URN) Namespace for the Society of Motion Picture and Television Engineers (SMPTE)," February 2008.

Revision Notes

This revision incorporates Amendment #1 to SMPTE 2029 approved February 12, 2009. The purpose of this revision is to add the NSS of URNs for Unique Material Identifier (SMPTE 330M).

The changes are summarized below:

1. The **Intellectual Property** section has been added.
2. The following has been added to **Section 3, Normative References**:
SMPTE 330M-2004, Television – Unique Material Identifier (UMID)
3. The following term has been added to **Section 4, Definition of Acronyms and Terms**:
UMID Unique Material Identifier (defined by SMPTE 330M)
4. **Section 7.1** has been amended as follows:
DOT = %x2E has been replaced with DOT = "."
5. The following Sections have been added:
8 Uniform Resource Names for Unique Material Identifiers
8.1 UMID URN NSS
8.2 UMID URN Examples