PROPOSED SMPTE STANDARD

SMPTE 335M

for Television —

Metadata Dictionary Structure

1 Scope

The metadata dictionary structure defined in this standard covers the use of metadata for all types of essence (video, audio, and data in their various forms). Applications of individual dictionary entries will vary but, when used, metadata shall conform to the definitions and formats in this metadata dictionary structure standard and the associated metadata dictionary recommended practice (SMPTE RP 210). SMPTE RP 210 defines a registered set of metadata element descriptions for association with essence or other metadata and this standard and the contents practice shall be used together as a pair — neither shall be used in isolation.

2 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 336M-2001, Television — Data Encoding Protocol using Key-Length-Value

SMPTE 359M-2001, Television and Motion Pictures — Dynamic Documents

SMPTE RP 210.1-2001, Metadata Dictionary

3 Metadata dictionary structure

The metadata dictionary structure provides flexibility in capturing metadata and exchanging it among applications through a standardized hierarchy of universal labels for the metadata elements, grouped to aid their management within a small but comprehensive number of classes. Metadata classes are collections of metadata elements with common characteristics or attributes. Additional classes are provided for user-defined metadata.

SMPTE RP 210 references an individual item or element of metadata using a two-part 16-byte universal label that is numerical (and hence language independent) and unique. The first eight bytes label the second eight bytes as a tag in a specific version of a designated metadata dictionary (tags are defined in SMPTE 336M). This tag is used to index the meaning or definition of the metadata element.

The actual metadata information described by the metadata element is the metadata value. The dictionary also contains information on the required format of metadata values and the allowable range of values (if applicable) either as a list or as a bounded range.

Individual data element values can frequently be represented in more than one way — for instance, it is possible to represent a textual value as ASCII or Unicode, where the value is identical but the particular representation different. It is important both that the representation is known and that as new representations are registered they can be accommodated. In this case, the last active word of the tag defines the representation in use — the default being 00_h.

PROPOSED SMPTE STANDARD

SMPTE 364M

for Television —

Declarative Data Essence — Unidirectional Hypertext Transport Protocol

Table of contents

1 Scope

This standard describes the unidirectional hypertext transfer protocol, or UHTTP. UHTTP is a one-way data transfer protocol that is designed to deliver resource data in a one-way broadcast-only environment. This transfer protocol is appropriate for delivery of HTML and other content resources using IP multicast over television vertical blanking interval (IP/VBI) and other unidirectional transport systems.

2 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.

IETF RFC 2616, Hypertext Transfer Protocol — HTTP/1.1

IETF RFC 2387, The MIME Multipart/Related Content-Type

ISO/IEC 11578:1996, Information Technology — Open Systems Interconnection — Remote Procedure Call (RPC), Annex A, Universal Unique Identifier

3 Introduction

The unidirectional hypertext transfer protocol, or UHTTP, is a simple, robust data transfer protocol that is designed to deliver efficiently resource data in a one-way broadcast-only environment. This transfer protocol is appropriate for delivery of HTML and other content resources using IP multicast over television vertical blanking interval (IP/VBI), in IP multicast carried in MPEG-2, or in other unidirectional transport systems. The UHTTP protocol is used to deliver television-related content resources (such as web pages, images, and scripts) which are broadcast along with a television signal.

Resources sent using the UHTTP protocol are divided into a set of data segments encapsulated in UDP packets. Typically, these packets are delivered via multicast IP, but this is not required. When delivered via IP multicast, the address and port used must be exclusively for UHTTP. That is, other UDP-based protocol data would be indistinguishable from UHTTP data, and if combined, may result in unpredictable receiver behavior. Each packet contains enough header information to begin capturing the data at any time during the broadcast, even midway through the transfer. This header contains a unique identifier (in the form of an UUID [annex A]) that uniquely identifies the transfer, and additional information that enables the receiver to place the data following the header in the appropriate location within the transfer. Additional