AES standard for digital audio - Audio applications of networks - Application of IEC 61883-6 32-bit generic data

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Abstract

The primary use of IEEE-1394 isochronous packets, as defined in IEC 61883-6, is for carrying audio and music data. This document defines an efficient means for carrying data in a wider variety of formats, for example professional audio and manufacturer-specific data, in IEC 61883-6 isochronous packets.

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Foreword

This foreword is not part of AES58-2008 *Application of 32-bit Generic Data Defined in IEC 61883-6*.

This document was developed under AES SC-02-12-G for project AES-X126, Profile for Professional Audio over 1394. It is derived from a draft submitted by J. Fujimori.

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Introduction

IEEE 1394 provides the serial bus framework for transmitting audio and music data according to the protocol in IEC 61883-6 Ed.2.

This document defines the application of the Basic Format given in IEC 61883-6. The use of 32-bit Generic Data provides flexibility in transmitting control information between audio devices. It also provides flexibility in transmitting audio in formats or at samples rates not envisioned in IEC 61883-6.

The use of 32-bit Generic Data provides an alternative to Ancillary Data in IEC 61883-6. In addition, the 32-bit Generic Data defined herein has an advantage over Ancillary Data in that 32-bit Generic Data can carry more bits of information per quadlet, since the 32-bit Generic Data format does not have to carry an 8-bit Label field or, possibly, an 8-bit Sub Label field.

0 Preamble

0.1 Patents

Attention is drawn to the possibility that some of the elements of this AES standard may be the subject of patent rights other than those identified herein. AES shall not be held responsible for identifying any or all such patent rights.

0.2 Documentation conventions

A Courier typeface may be used to identify computer-listing examples to distinguish them from regular text.

Following ISO convention, decimal points are conventionally shown as commas (,) unless an alternative, such as a period (.), is expressly stated here, with justification.

A hexadecimal number is identified by a subscript-16 suffix; for example, $\mathtt{FF}_{16}$. The text specifies if a number is binary. Otherwise all numbers in this document are decimal. All numbers are shown with most significant digit to the left.

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1 Scope

The audio and music data transmission protocol (A/M protocol) specified in IEC 61883-6 defines several data types and the packetization formats for them, including, “32-bit Generic Data”. The content format of 32-bit Generic Data and description of the format are described in this document, together with an associated content identifier. The means of selecting the content format of 32-bit Generic Data for transmitters or receivers is outside the scope of this specification. Any control protocols can be used for selecting the content format of 32-bit Generic Data if the control protocol is extended to handle this 32-bit Generic Data.

The 32-bit Generic Data format discussed in this document is different from the "AM824 Generic Format" and the "Generic Ancillary Data", also defined in IEC 61883-6.

2 Normative references

IEC 61883-1 Ed.2 2003, Consumer audio/video equipment - Digital interface - Part 1: General. Geneva, Switzerland: International Electrotechnical Commission.

IEC 61883-6 Ed.2 2005, Consumer audio/video equipment - Digital interface - Part 6: Audio and music data transmission protocol, Edition 2. Geneva, Switzerland: International Electrotechnical Commission.

IEEE 1394-1995 Standard for a High Performance Serial Bus. Institute of Electrical and Electronics Engineers, Inc. (IEEE), New York, 1995.

3 Definitions and abbreviations

3.1 A/M protocol

The audio/music protocol specified in IEC 61883-6.

3.2 AM824

A 32-bit data structure consisting of an 8-bit label and 24-bit data that is defined in IEC 61883-6.

3.3 32-bit generic data

A 32-bit data structure, described in IEC 61883-6, 8.5, whose content is signaled in a `CONTENT_IDENTIFIER` data block, described in this document.

3.4 AV/C

protocol for controlling audio/visual consumer devices, documented in the 1394TA document *AV/C Digital Interface Command Set General Specification and Configuration ROM for AV/C Devices 1.0*.

3.5 FDF

Format-dependent field in the A/M protocol header for distinguishing various kinds of audio data formats.

3.6 SFC field

Sampling Frequency Code (see IEC 61883-6).

3.7 Ancillary Data

One form of AM824 data for transmitting non-audio information (see IEC 61883-6).

3.8 Audio pack

Format for transmitting four 24-bit audio samples in three successive quadlets (see IEC 61883-6).

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