STANDARDS AND INFORMATION DOCUMENTS

AES64-2012
WITHDRAWN
(w2018)

AES standard for audio applications of networks - Command, control, and connection management for integrated media
(Withdrawn 2018)

AUDIO ENGINEERING SOCIETY, INC.
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AES64-2012
(W2018)

AES standard for audio applications of networks - Command, control, and connection management for integrated media

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Abstract

This standard for networked command, control, and connection management for integrated media is an IP-based peer-to-peer network protocol, in which any device on the network may initiate or accept control, monitoring, and connection management commands. The AES64 protocol has been developed around three important concepts: structuring, joining, and indexing. Every parameter is part of a structure, and control is possible at any of the levels of the structure, allowing for control over sets of parameters. Parameters can be joined into groups, thereby enabling control over many disparate parameters from a single control source. Every parameter has an index associated with it and, once discovered, this index provides a low bandwidth alternative to parameter control.

This document was WITHDRAWN on 2018-05-25.

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Contents

Foreword

This foreword is not part of the AES64-2012 *AES standard for audio applications of networks - Command, control, and connection management for integrated media*.

This document grew out of an earlier XFN protocol and was developed within AES standards working group SC-02-12 under project AES-X170. The members of the writing group that developed this document in draft included R. Gurdan - leader of task group SC-02-12G - and R. Foss.

Richard Foss
Chair, working group SC-02-12 (June 2012)

Note on normative language

In AES standards documents, sentences containing the word “shall” are requirements for compliance with the document. Sentences containing the verb “should” are strong suggestions (recommendations). Sentences giving permission use the verb “may”. Sentences expressing a possibility use the verb “can”.

AES standard for audio applications of networks - Command, control, and connection management for integrated media

Introduction

The AES working and task groups for audio applications of networks have up to now focused on connection management issues related to the routing of audio and MIDI data, as well as associated synchronization issues. This standard specifies an approach to the control and monitoring of professional audio devices within any IP-based audio and other media networks, and furthermore specifies how such an approach can be integrated with connection management.

0 Preamble

0.1 Patents

The Audio Engineering Society draws attention to the fact that it is claimed that compliance with this AES standard or information document may involve the use of the following patents:

European Patent PCT/EP/2008/062699 “Digital Multimedia Network with Hierarchical Parameter Control Protocol”, publication date 9 April 2009.

European Patent PCT/EP/2008/063195 “Digital Multimedia Network with Join Mechanism”, publication date 9 April 2009.

European Patent PCT/EP/2008/063255 “Digital Multimedia Network with Latency Control”, publication date 9 April 2009.

European Patent PCT/EP/2008/063256 “Data Stream Router”, publication date 9 April 2009.

European Patent PCT/EP/2008/063197 “An Apparatus and a Method for Modifying a Command Message in a Digital Multimedia Network”, publication date 9 April 2009.

The AES holds no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the AES that it is willing to negotiate licenses under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is archived with the AES.

Information may be obtained from:

Mr Robby Gurdan: Universal Media Access Networks GmbH, Martinstraße 48-50, 40223 Düsseldorf, Germany

Prof Richard Foss: Computer Science Department, Rhodes University, Grahamstown 6140, South Africa

Attention is drawn to the possibility that some of the elements of this AES standard or information document may be the subject of patent rights other than those identified above. 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.

Computer language examples are in the C language.

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

Values using hexadecimal notation are identified by a suffixed subscript 16; for example $\texttt{8A}_{16}$.

Case sensitivity: All parameters and identifiers listed in the specification are case sensitive.

1 Scope

This standard specifies:

1. A set of structured Internet Protocol-based messages and a specification of the messages that can be used to control single or groups of parameters, and to monitor these parameters. The parameters are associated either with typical signal processing functionality within audio and other media devices, synchronization between such devices, or connections between such devices.
2. A definition of indexed parameters and a specification of the message format for such messages.
3. A definition of peer-to-peer grouping and master-to-slave grouping of device parameters, and a specification of the messages required to implement such grouping.
4. A definition of modifiers, and a specification of messages required to create and control such modifiers.
5. A definition of desk items as a means to extract graphical user information from a device and allow for the control of the device via the extracted graphical controls.

   A definition of security levels, and a specification of messages required to set and get such levels.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

RFC 768 *User Datagram Protocol*, Internet Engineering Task Force, August 1980; www.ietf.org.

RFC 791 - *Internet Protocol*, Internet Engineering Task Force, September 1981; www.ietf.org.

RFC 1122 - *Internet Engineering Task Force, Requirements for Internet Hosts*, October 1989; www.ietf.org.