

AES standard for Audio applications of networks - Open Control Architecture - Part 2: Class structure

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Abstract

AES70 defines a scalable control-protocol architecture for professional media networks. It addresses device control and monitoring only; it does not define standards for streaming media transport. However, OCA is intended to cooperate with various media transport architectures.

AES70 is divided into a number of separate parts. This Part 2 specifies the control class structure for AES70 that defines the AES70 control and monitoring functional capabilities and should be read in conjunction with Part 1, Framework, and Part 3, TCP/IP communications protocol.

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Foreword

This foreword is not part of this document, AES70-2-2015, *AES standard for Audio applications of networks - Open control architecture - Class Structure*.

This document is a member of the three-document set that defines AES70, the Open Control Architecture (OCA). AES70-2 defines the control class structure for AES70. Other parts define the overall framework and the specific protocols used.

The development project for this standard was originally proposed by the Open Control Architecture Alliance (OCA Alliance) and initiated in October 2012 as project AES-X210 to be developed in task group SC-02-12-L. The OCA Alliance also contributed the task-group working draft and, as a direct result, there are a number of references to "OCA" in the protocol in order to maintain compatibility with implementations already in the field.

The members of the writing group that developed this document in draft are: J. Berryman, H. Hamamatsu, T. Head, S. Jones, M. Lave, N. O'Neill, M. Renz, M. Smaak, G. van Beuningen, S. van Tienen, E. Wetzell.

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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".

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AES standard for Audio applications of networks - Open control architecture - Class Structure

0 Introduction

0.1 General

This document defines the class structure of the Open Control Architecture (OCA) for the control and monitoring of media networks. The class structure defines the control repertoire. In what follows, the class structure is referred to as the AES70 *OCC*.

The elements of the AES70 OCC are class definitions in the object-oriented design sense. Each class defines a particular control or monitoring interface element that is accessible over the media network via one or more communications protocols that AES70 defines. An AES70-controllable device may implement a set of these interface elements; the complete set constitutes the interface the device presents to the network for remote control and monitoring purposes. This interface is called the AES70 *device model* and is defined in AES70-1.

To distinguish OCC classes from programming classes, this standard may where appropriate refer to OCC classes as *control classes*, and their instances as *control objects*, where it should be understood that "control" includes both control and monitoring functions.

AES70 specifies system control and monitoring only. It may be integrated with any streaming media transport scheme, as long as the underlying communication network is capable of carrying AES70 control and monitoring traffic.

AES70 does not define a complete device implementation model. For example, if a particular implementation element has no remotely controllable features, then that element is not represented in the AES70 device model.

0.2 Documentation conventions

Numerical values are decimal unless otherwise stated.

A Courier typeface is used to identify **class names** to distinguish them from regular text.

Where new terminology is first introduced in body text, the term will be set in an italic typeface.

1 Scope

AES70 defines a scalable control-protocol architecture for professional media networks. It addresses device control and monitoring only; it does not define standards for streaming media transport.

AES70 is divided into a number of separate parts. This Part 2 specifies the control class structure for AES70 that defines the control and monitoring functional capabilities of the standard and should be read in conjunction with Part 1, Framework.

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.

AES70-1 *AES standard for audio applications of networks - Open Control Architecture - Framework*, Audio Engineering Society, New York, NY., US.

AES70-3 *AES standard for audio applications of Networks - Open Control Architecture - Part 3: Protocol for TCP/IP Networks*, Audio Engineering Society, New York, NY., US.

ISO/IEC 19503 Ed.1:2005 *Information technology – XML Metadata Interchange (XMI)*, International Organization for Standardization (ISO), Geneva, Switzerland.

3 Terms, definitions and abbreviations

For the purposes of this document, the following terms, definitions, and abbreviations apply.

See AES70-1, clause 3.

4 Class structure

The class structure shall be defined by a Universal Modeling Language (UML) document in XML Metadata Interchange (XMI) 2.1 format as defined in ISO/IEC 19503.

See annex A for access data.

NOTE 1 This XMI machine-readable format is intended to enable implementers to have direct access to the class model with maximum speed and the minimum risk of transcription errors compared with building individual class models from a traditional paper description.

NOTE 2 The XMI class model can be parsed in a suitable UML application, such as Enterprise Architect from Sparx Systems.

5 Informative overview

5.1 General

This section gives a brief overview of the AES70-2 OCC.

5.2 Control classes

AES70-2 defines three categories of control classes, as follows:

Workers	Classes that represent signal processing and monitoring functions.
Agents	Classes that represent control-flow processing functions.
Managers	Classes that represent device housekeeping functions.

An AES70 device model consists entirely of objects of classes from these categories.

5.3 Datatypes

AES70-2 also provides two sets of supporting definitions:

Control Datatypes	Datatypes used by the control classes.
Control Class Construction Parameters	Datatypes used in the construction of control classes

An overview of the class structure is shown in figure 1. Summaries of the class categories follow.

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