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AES standard for audio applications of networks - Requirements for Media Network Directories and Directory Services

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Abstract

This document sets forth technical recommendations for media network directories and directory-related services and mechanisms such as network discovery. It is hoped that this document will inform future industry directory and directory services standards that cover at least the following topics:

1. Registration, query, and administration protocols;
2. Security mechanisms;
3. Directory data model;
4. Query language and related semantics; and
5. Scalability strategies.

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Foreword

This foreword is not part of this document, AES74, *AES standard for audio applications of networks - requirements for Media Network Directories and Directory Services*.

A media network contains two primary sets of services: (1) a *media transport set*, which is responsible for transporting synchronous media samples, and a (2) *system control set*, which is responsible for the remote control of devices and the control of media transport traffic.

These primary service sets require at least two support services: (a) a *time* service, which allows synchronization of samples between devices, and (b) a *directory*, which allows devices, device services, and media streams to be recorded in a common database that may be queried as required for network operation.

This standard specifies a set of functional requirements for media network directories in professional audio applications in the fields of sound reinforcement, public address, sound recording, electronic music, broadcasting, and cinema. The standard does not address consumer, automotive, or telecommunications applications.

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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”.

AES standard for Audio applications of networks - Requirements for Media Network Directories and Directory Services

0. Introduction

0.1. General

This document specifies technical requirements for media network directories and directory-related services. It has been compiled from various sources, and the contents have been offered for public comment via a Call for Comment document first circulated by the AES in 2017.

Media network directories are application-layer mechanisms that collect, store and disseminate information about devices, application services, and other elements of media networks. They are used for connection management, network supervision, and other purposes.

0.2. Document conventions

Numerical values are decimal unless otherwise stated.

A `Courier` typeface is used to identify programmatic names to distinguish them from regular text.

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

When references are cited in the text they are [enclosed in brackets].

1. Scope

The requirements given here address the following aspects of media network directories:

This document is a requirements guide. It does not specify implementation design.

- Data model;
- Registration;
- Querying;
- Administration;
- Scalability;
- Security.

The scope of this document excludes directory service implementation architectures, application protocols for accessing the Directory data, and internal mechanisms the services may use to maintain the directory data.

Also excluded is connection management. In this context, "connection management" means the protocols and processes in a media network by which signal flows are set up, monitored, and taken down. Although directories are *used* by connection management, connection management mechanisms themselves are outside this document's scope.

2. Normative references

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RFC 2606 *Reserved Top Level DNS Names*. Internet Engineering Task Force (IETF), 1999.

RFC 2782 *A DNS RR for specifying the location of services (DNS SRV)*. Internet Engineering Task Force (IETF), 2000.

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RFC 6762 *Multicast DNS*. Internet Engineering Task Force (IETF), 2013.

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RFC 7231 *Hypertext Transfer Protocol (HTTP/1.1): Semantics and Content*. Internet Engineering Task Force (IETF), 2014

RFC 7232 *Hypertext Transfer Protocol (HTTP/1.1): Conditional Requests*. Internet Engineering Task Force (IETF), 2014.

RFC 7233 *Hypertext Transfer Protocol (HTTP/1.1): Range Requests*. Internet Engineering Task Force (IETF), 2014.