AES-R4-2007
revision of AES-R4-2002

AES standards project report — Guidelines for
AES standard for digital audio — Digital input-output interfacing — Transmission of digital audio over asynchronous transfer mode (ATM) networks, AES47

Abstract

This document is intended to provide background information of use to implementers of AES47, both
information on why certain decisions were made and also hints on aspects of the construction of conformant
equipment.

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Foreword

 [This foreword is not a part of *AES standards project report — Guidelines for AES standard for digital audio — Digital input-output interfacing — Transmission of digital audio over asynchronous transfer mode (ATM) networks, AES47,* AES-R4-2002.]

The draft of this report was prepared by J. Grant for task group SC-02-02-E.

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SC-02-02
2002-01-14

Foreword to 2007 edition

The text has been revised to correspond to the 2006 edition of AES47 and to take account of other events such as the publication of AES51, AES52, and AES53.

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0 Introduction

This document is intended to provide background information of use to implementers of AES47, both information on why certain decisions were made and also hints on aspects of the construction of conformant equipment.

As such it is purely informative. If any part of it conflicts with any provision of AES47, then AES47 takes precedence.

Within this document, each clause or subclause has the same number as the clause or subclause in AES47, though the headings are not always identical. In some cases this document has an additional level of subclauses (as in 4.1.3), or fewer (as in 4.2).

When there is an additional level of subclauses (with headings), the numbers on those subclauses may coincide with the numbers of paragraphs (without headings) in AES47. However, the subclause does not apply just to the paragraph that has the same number.

0.1 Background

This clause is intended to provide a justification for the choice of ATM in anticipation of the question "why not use IP?"

It is unfortunate that ATM has been very poorly marketed. Its name is an abstruse reference to the idea that it is a halfway house between synchronous transfer mode as in ISDN and packet transfer mode as in IP. The alternative broadband ISDN would have been better but does not seem to be used in the marketplace. More importantly, ATM was originally promoted simply as a faster medium for data processing applications; much effort was put into developing LAN emulation, with the idea that users could get the same service from ATM as from the Ethernet and Token Ring networks it would gradually replace, and once they had ATM everywhere they could then think about developing applications that would use the services that only ATM could provide. The result was that users never had a reason to install ATM rather than the much cheaper fast Ethernet.

A better strategy would have been to make it possible to access broadband ISDN services, albeit with inferior performance, via LAN infrastructures such as Ethernet. Then users would see an immediate benefit in installing ATM. In the core network it would enable new services, particularly video and high-quality audio; migrating ATM to the desktop would enhance the quality of those services. The cells-in-frames initiative led by Cornell University, which published a specification in 1996-10, was not pursued; but AES51 is now available for use in such applications.