

Source: AT&T, Bellcore, IBM, MCI
Title: Use of AAL 5 for Carrying CBR MPEG-2 Transport Streams for video-on-demand applications
Purpose: Proposal

ABSTRACT¹

This contribution proposes that AAL 5 be used as the AAL to transport MPEG-2 TS in CBR video-on-demand applications and provides a rationale for this choice.

1. Introduction

The choice of AAL to support MPEG-2 Transport Streams for CBR applications is currently under investigation. The U.S. proposes that MPEG-2 video-on-demand applications use AAL 5.

2. Reasons for using AAL 5

Among the reasons to adopt AAL 5 are the following:

- Any AAL for CBR MPEG-2 TS requires that the CDV be bounded. IF CDV is bounded AAL 5 allows the use of the MPEG-2 TS timestamps for clock recovery. Therefore, MPEG-2 TS clock recovery can use a PLL operating at the 27 MHz MPEG-2 system clock frequency independent of the TS data rate.
- The CDV removal buffer and the clock recovery buffer can be merged into a single buffer, allowing a single PLL to be used. Thus the need for 2 PLLs, one for CDV removal and one for MPEG-2 clock recovery, is avoided. Therefore, CDV removal need not be provided by the AAL.
- For some T-TE configurations where signalling and data services are also supported by the B-TE, AAL 5 will of necessity also be present.
- When considering early deployment scenarios, the current wide availability of AAL 5 chips makes AAL 5 the reasonable choice.
- Of the available standardized AAL alternatives that provide the required error detection capability, the use of AAL 5 can incur the least amount of protocol overhead.

3. Proposal

With the ATM network bounding the Cell Delay Variation (CDV) and the other ATM QOS characteristics that an application can expect, the use of AAL 5 is recommended to support CBR MPEG-2 TS video-on-demand applications.

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