AVC-706

ATM Forum
Audiovisual and Multimedia Services

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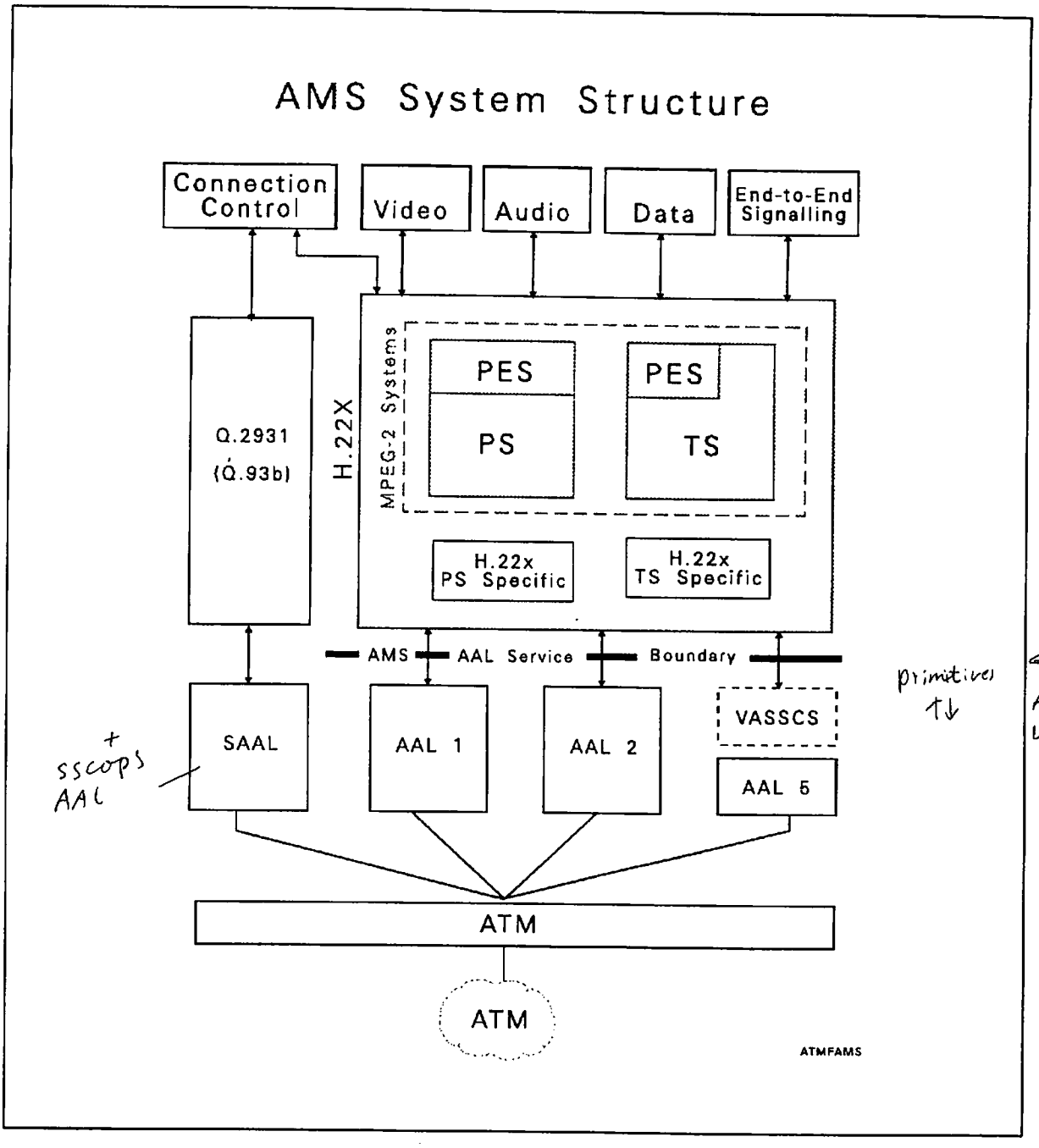
ATM Forum SA&A Framework

device driver

Scope 1	Scope 2	Scope 3	Scope 4	Scope 5
API (semantics, syntax)	AMS	FRS	SMDS	CES (circuit emulation)
Q.2931	? ? ?			E1, DS1, Nx64 (mx64 DS1 E1)
SSCOP (Q.2110)	H.22x MPEG-2 SL	Serv IWF Null SSCS / NET IWF FR SSCS		CBR
AALs: AAL5	AAL1, AAL5, AALx	AAL5 CPCS	AAL3/4	AAL1
ATM Layer				
Performance objectives, Minimum Quality of Service Values				
Physical Layer (I.432)				

JJLYNCH

ATMFSAA


AMS System Structure
Connection Control
Video
Audio
Data
End-to-End Signalling
Q.2931
(Q.93b)
H.22X
MPEG-2 Systems
PES
PS
PES
TS
H.22x PS Specific
H.22x TS Specific
AMS
AAL Service
Boundary
SAAL
AAL 1
AAL 2
VASSCS
AAL 5
ATM
ATM
ATMFAMS
+ SSCOPS AAL
primitives ↑↓
API work

Meeting Summary

September 26-29 SAA AMS Meeting

The AMS group focused on:

1. Selecting the top 4 Service Descriptions that the AMS group would work on
2. Defining and agreeing on the AMS Phase 1 workscope — early 1994
3. Debating the MPEG over AAL5 "packing" issue
4. Providing a Cell Delay Variation (CDV) definition for the QOS ad hoc group

pragmatic

Highlights

Videoondemand (VOD) was the application (service definition) that received the most support from the membership.

It was agreed that videoondemand using ConstantBitRate (CBR) MPEG2 over AAL5 would be defined in the AMS Phase 1 workscope.
VBR support will be addressed in a later phase.
No AAL1 support is currently included in phase 1.

The MPEG over AAL5 packing issue created the most excitement.

Two proposals were presented on how to encapsulate MPEG2 Transport Stream packets into AAL5 PDUs: one by IBM and the other by DiviCom.

The DiviCom proposal (ATM_Forum/940879) advocates having the sending (i.e. SERVER) node parse the MPEG stream and send either 2 MPEG Transport Stream (TS) packets per AAL 5 PDU or only 1 TS packet/AAL5 when there is a PCR timestamp present in the first MPEG2 TS packet. They view 2 transport stream packets/PDU as an absolute maximum.

The IBM contribution (ATM_Forum/940857) proposed a fixed sized PDU. Identified 2 TS packets/PDU as a minimum and suggested that a larger number needs to be investigated.
Microsoft was very interested in having a larger number (N•2) TS packets put into 1 AAL5 PDU.

These proposals generated considerable debate. Ultimately a motion was passed that further study was needed and the decision be deferred until the next meeting. A subsequent motion was also passed that this packing decision MUST be made at the December meeting in Kyoto.

The AMS group forwarded a 2point peaktopeak Cell Delay Variation (CDV) with a specified confidence factor definition to the QOS ad hoc group. With this as input, the QOS group worked on defining two endtoend delay parameters: PeaktoPeak CDV and Maximum Cell Transfer Delay (CTD).

Service Descriptions

The following Service descriptions were voted on:

each member voted 3

Described in Contribution	Title	Yes
940688	VideoonDemand	34
940356	Video Conferencing	27
940355	Multimedia Desktop collaborative	21
940469	Interactive Distance Learning	19
940470	Post Production Editing	4
940461	Emergency Broadcast	0

Top 4 were accepted into the AMS workscope.

AMS Phase 1 Workscope

The following motions were passed related to phase 1:

a). Include videoondemand using ConstantBitRate (CBR) MPEG2 over AAL5 in the Audiovisual Multimedia Service (AMS) groups workscope for Phase 1 (940688).
(MOTION BY: Jeff Lynch/IBM, PASSED)

b). Phase 1 AMS Implementation Agreement (IA) section on VideoonDemand should recommend one solution for AAL5 to support CBR MPEG2.
(MOTION BY: Georgia Waide/Cable and Wireless, PASSED6/5/10)

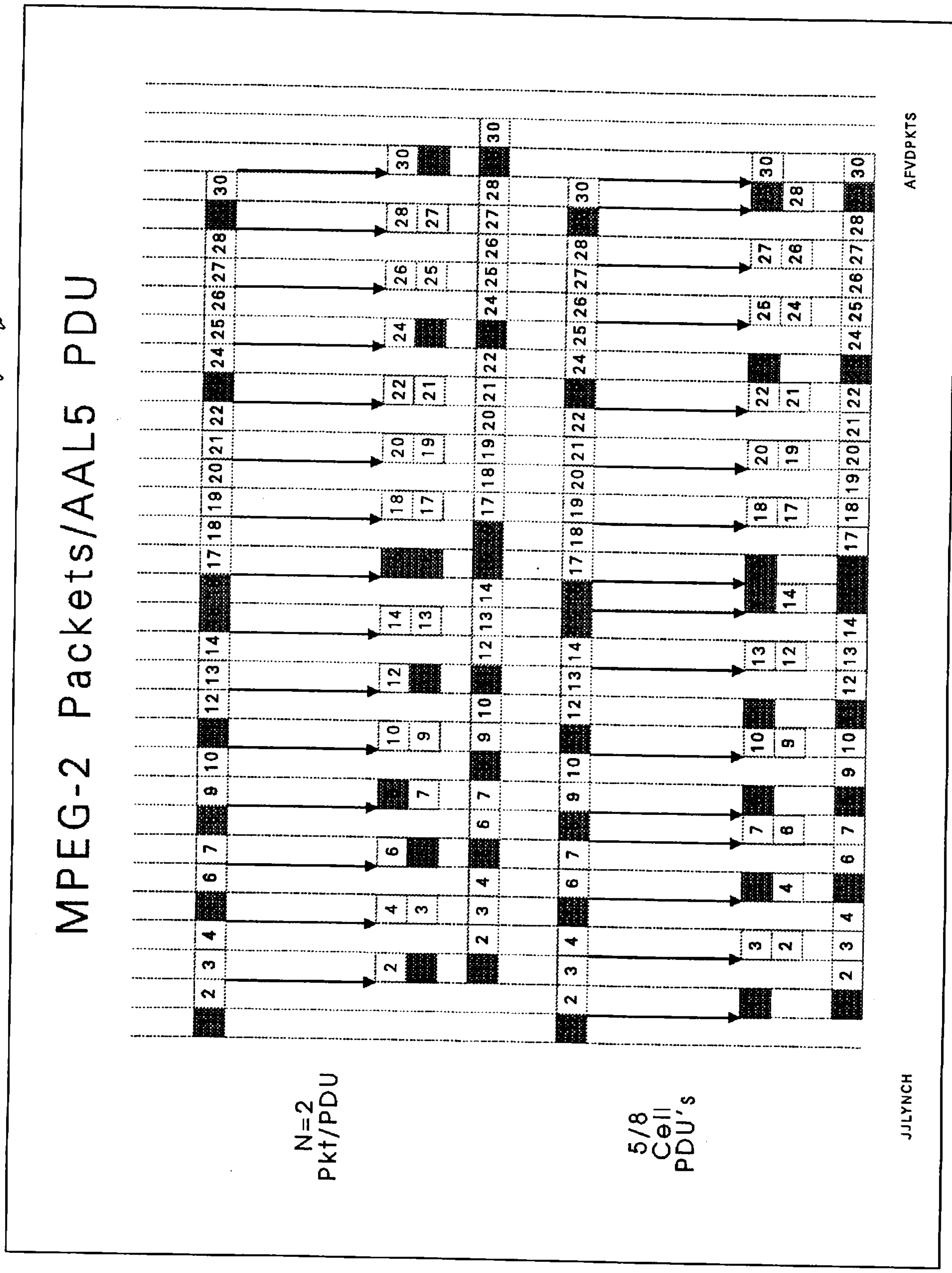
c). Exclusive of the packing proposals, adopt 940857 as a strawman text for the Videoondemand section of Phase 1 AMS IA (CBR MPEG2 transport streams over AAL 5)
(MOTION BY: Jeff Lynch/IBM, PASSED)
940857 is our MPEG2 over AAL5 contribution. In addition to the packing proposal, it describes:
A generic VOD reference configuration and a functional scenario
Node structures
VOD/MM Q.2931 signaling requirements

d). Phase 1 AMS IA should include an informative annex describing the accumulation and transformation of jitter terms affecting timecritical information streams. This includes terms related to CDV from cell switching or rate adaptation, AAL5 PDU delay variation due to segmentation and reassembly, MPEG2 Transport Stream packet delay variation due to segmentation and reassembly etc.
(MOTION BY: Steve Wright/Fujitsu, PASSED)

These four motions were grouped together and collectively voted on at the SAA plenary as comprising the AMS Phase 1 Workscope. This PASSED 25for/0against/5abstain. It was decided that this phase 1 workscope decision and the associated MPEG over AAL5 Packing issue should be formally communicated to ANSI and ETSI as a liaison. The draft of this liaison to T1S1, T1A1, and ETSI NA5 is attached in Appendix A.

TS Packets/AAL5 PDU

- The following chart shows transmission and PDU assembly jitter introduced by:
  - Constant 2 TS Packets/AAL5 PDU
  - Divicom proposal to send PCR ASAP (5cell/8cell)


MPEG-2 Packets/AAL5 PDU
N=2 Pkt/PDU
5/8 Cell PDU's
AFVDPKTS
JJLYNCH
need not be MPEG TS aware — decoder needs more dejittering
jitter due to AAL5 PDU
1.5 Mbit/s
equivalent to 1 TS packet 1 ms

Next Meeting

Shaping up as an important AMS meeting

Meeting will be in Kyoto, Japan (December 1 to 4)

Contributions requested:

- Packing proposal alternatives, pros/cons, justification, etc.
- Contributions regarding phase 2 workscope.

cut out date
November 11