ITU Telecommunication Standardization Sector
Study Group 15
Experts Group for Video Coding and Systems
in ATM and Other Network Environments

Document AVC-661
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TITLE: Draft Recommendation H.32X
PURPOSE: Discussion

This document contains the draft text for ITU-T Recommendation H.32X, "Broadband audiovisual communication systems and terminal equipment."

Draft Recommendation H.32X

BROADBAND AUDIOVISUAL COMMUNICATION SYSTEMS AND TERMINAL EQUIPMENT

1. Scope

This Draft Recommendation covers the technical requirements for the systems and teminal equipment of broadband audiovisual communication services defined in H.200/AV.100-Series Recommendations.

The video and audio coding and other technical aspects that are applicable to more than one distintict services are covered in H.200/AV.200-Series Recommendations.

2. Definitions

3. Applications

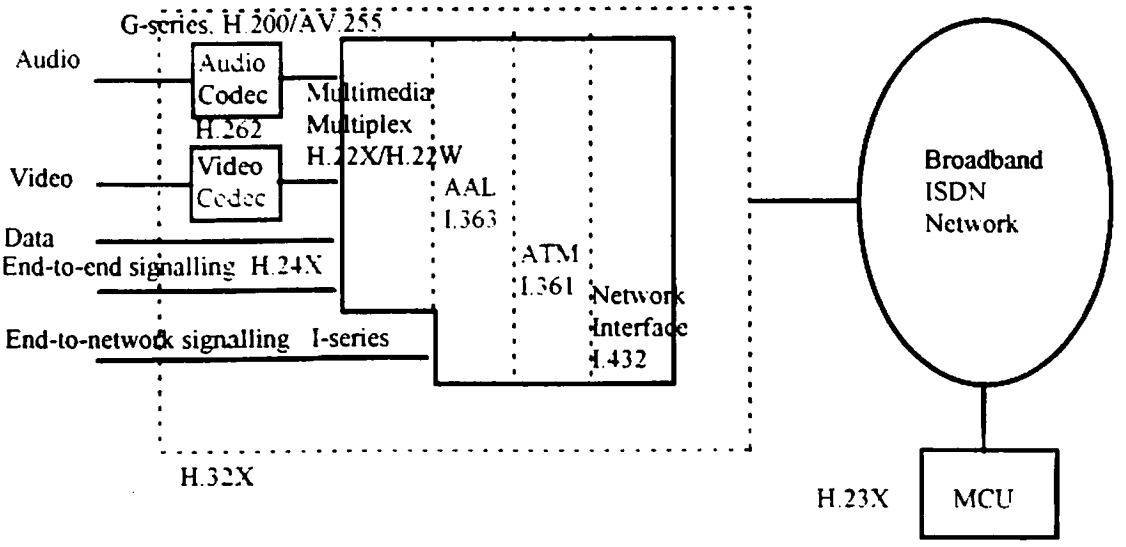
- Conversational services
- Retrieval services
- Messaging services
- Distribution services with user individual presentation control
- Distribution services without user individual presentation control

4. System description

4.1 System configuration

Figure 1/H.32X shows a generic broadband audiovisual communication system. It consists of terminal equipment, network, munltipoint control unit (MCU) and the constituent elements of the terminal equipment. The corresponding Recommendations/Draft Recommendations are also identified.

Figure 1/H.32X: Broadband audiovisual communication system and terminal configuration



4.2 Communication Mode

A communication mode of H.32X terminals is defined as a collection of the video codec mode, audio codec mode, end-to-end signalling mode, and network adaptation mode. These modes, the video codec mode, audio codec mode, end-to-end signalling mode, and network adaptation mode, are defined in such a way that a proper communication mode can always be idenfied for a broadband audiovisual communication session between H.32X terminals of different types. The exact structure of such definition is for further study.

4.2.1 Video Codec

The video codec modes are defined based on Recommendation/Draft Recommendation H.261, H.262. The exact definition is for further study. Table 1 of AVC-608 provides an example of such definition.

4.2.2 Audio Codec

The audio codec modes are defined based on Recommendations/ Draft Recommendations G.711, G.722, G.728, H.200/AV.255 (MPEG Audio). The exact definition is for further study. Table 2 of AVC-608 provides an example of such definition.

4.2.3 Network Adaptation

The newrork adaptation modes are defined based on Draft Recommendations H.22W, H.22X and Recommendation I.363. The exact definition is for further study. Table 3 of AVC-608 provides an example of such definition.

4.2.3.1 Multimedia multiplexing and synchronization

As per Draft Recommendations H.22W, H.22X.

The types of media for multiplexing

I. Video: more than 1 program (a pair of Audio and Video)
   A. H.261
   B. H.262
II. Audio: more than 1 program (a pair of Audio and Video)
   A. Telephone quality: G.711
   B. AM Broadcasting quality: G.722
   C. CD quality: MPEG-2 Audio (Stereo)
III. Data: It is necessary to have data channel multiplexing method like H.DLL.
   A. LSD (FAX, Telewriting etc.)
      1. less than 64kbps.1 channel or more
      2. remote camera control
      3. VTR control for answering videophone
   B. HSD (JPEG etc.)
      1. larger than 64kbps.1 channel or more
      2. MLP (MCU etc.)
         (1) Low bit rate channel , High bit rate channel : 1 channel or more(each bit rate channel)

4.2.3.2 AAL

As per Recommendation I.363.

4.2.4 End-to-end signalling

4.2.4.1 End-to-end control & indication

- H.23X
- Choice of Control & Indication Signals; relevance to MPEG DSM-CC

4.2.4.2 End-to-end communication procedures

- H.24X

4.3 Terminal Type

The terminal types are defined based on the communication modes that they are capable of. The exact definition is for further study. AVC-608 provides an example of such definition.

4.4 Call/Connection Controls

- AV.42X

4.5 Point to point communication

The provision of the communication, including both normal and exceptional procedures, is for further study

4.6 Multipoint communication

The provision of the communication, including both normal and exceptional procedures, is for further study

- Use of B-ISDN services such as multicasting
- Use of AV servers such as MCU
- System solution for the mixture of H.32X and H.320

5. Terminal equipment

5.1 Environments

For further study

5.2 Audio arrangement

I. Input equipment
  A. Microphone (Stereo;videoconferencing)
  B. Music source (Compact Disc etc.)
  C. Cinema sound (Surround)
  D. Echo canceler (videoconferencing , videophone)
II. Output equipment
  A. Loudspeaker

5.3 Video arrangement

I. Input equipment
  A. Camera
    1. 4:3 Display aspect ratio
      (1) NTSC Camera
      b) PAL/SECAM Camera
    2. 16:9 Display aspect ratio
      a) NTSC/PAL Camera (Letter Box) ;Video coding algorithm using MP@ML
      b) HDTV Camera ;Video coding algorithm using MP@HL or H14L
  B. VTR
    1. with precise time base corrector
    2. without time base corrector
      a) In this case Decoder doesn't synchronize with Encoder.
II. Output Equipment
  A. Monitor
    1. NTSC monitor
      a) PAL/SECAM monitor
      b) NTSC/PAL monitor (Letter Box)
    2. HDTV monitor

III. Picture format
IV. Format conversion for interregional communication (informative)

5.4 Data and other auxiliary equipment

I. Input Equipment
  A. FAX
  B. Telematic Equipment
    1. Pointing Device
  C. Telewriting Equipment
II. Output Equipment
  A. FAX
  B. Telematic Equipment
    1. Pointing Device
  C. Telewriting Equipment

5.5 Optional enhancements

For further study.

5.6 Error resilience

5.6.1 Video layer

For further study.

5.6.2 Multimedia multiplex layer

For further study.

6. Intercommunications

6.1 Intercommunication between different terminal types

For further study.

6.2 Intercommunication with N-ISDN terminals

For further study.
- H.320 connected to N-ISDN
- H.320 emulation mode is mandatory (switchable)

6.3 Intercommunication with telephony

For further study.

6.4 Intercommunication with audiovisual terminals connected to other networks

For further study.
- H.32Y for H.320 adaptation to B-ISDN
- H.32Z for LANs