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

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Source: Rapporteur for Q.2/15 (Sakae OKUBO)
Title: Current status of G and H-series Recommendations for audiovisual communication systems
Purpose: Information

This document summarizes the current status of ITU-T Recommendations for audiovisual communications systems in various network environments in the following form:

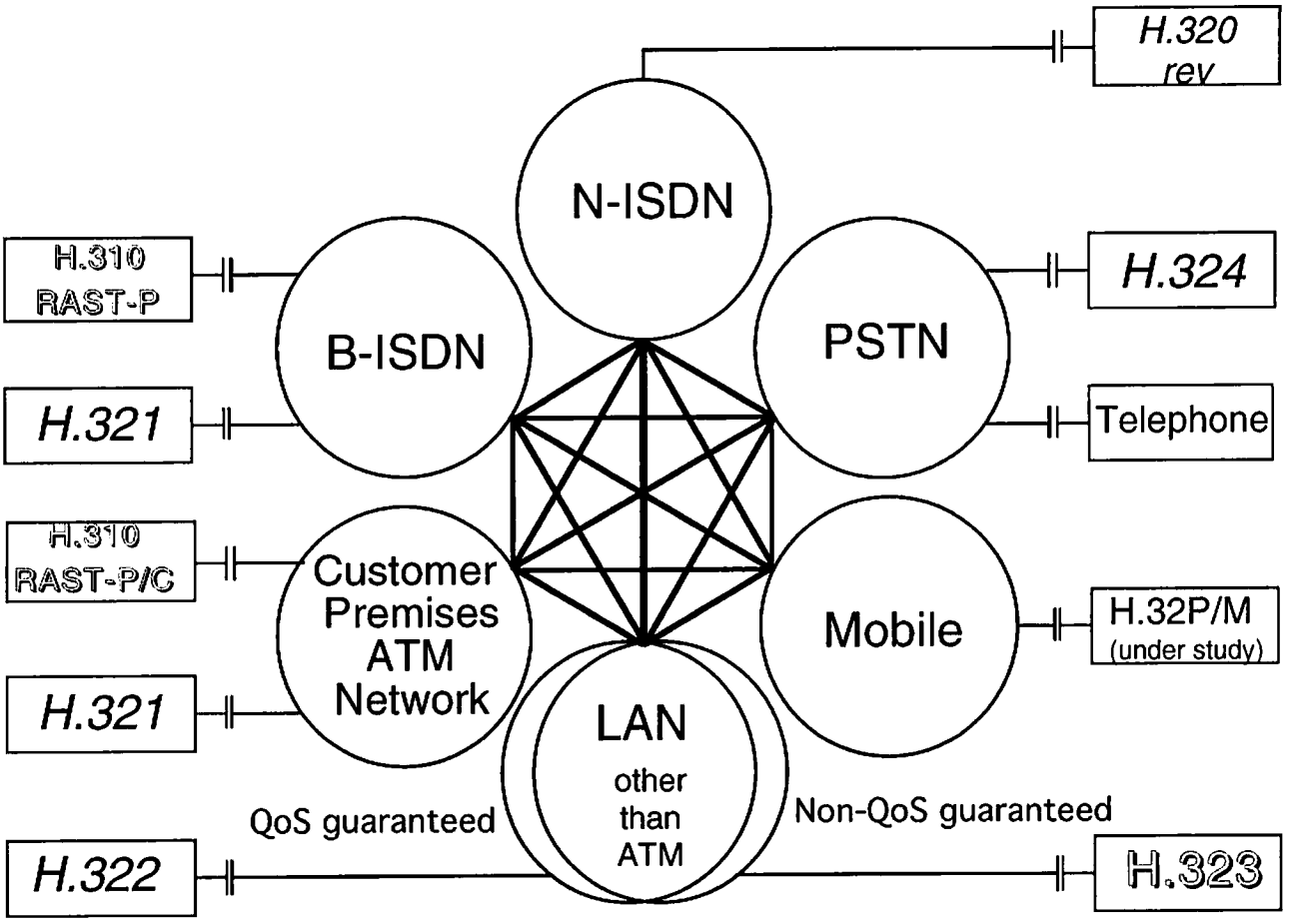
- List of relevant Recommendations and their decision dates
- Protocol stack diagram

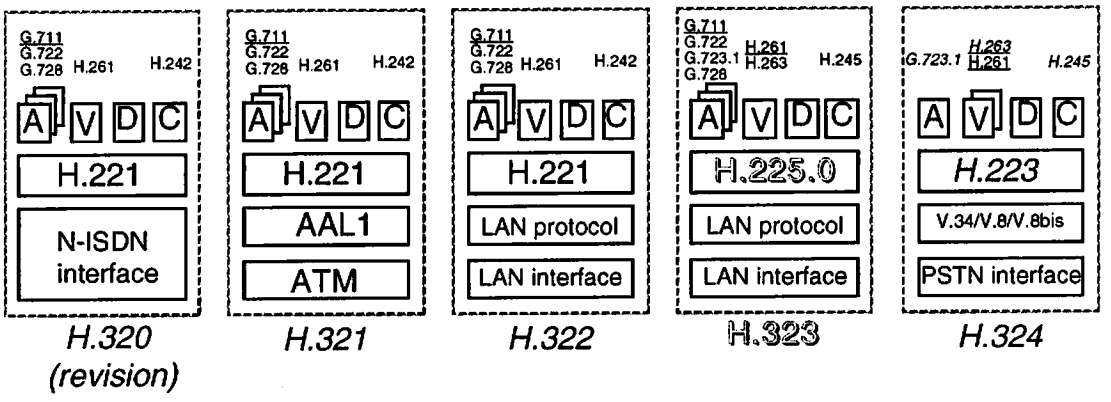
It also reproduces the outcome of discussion in Yokosuka on the function allocation between terminals and gateways for interworking between different network systems.

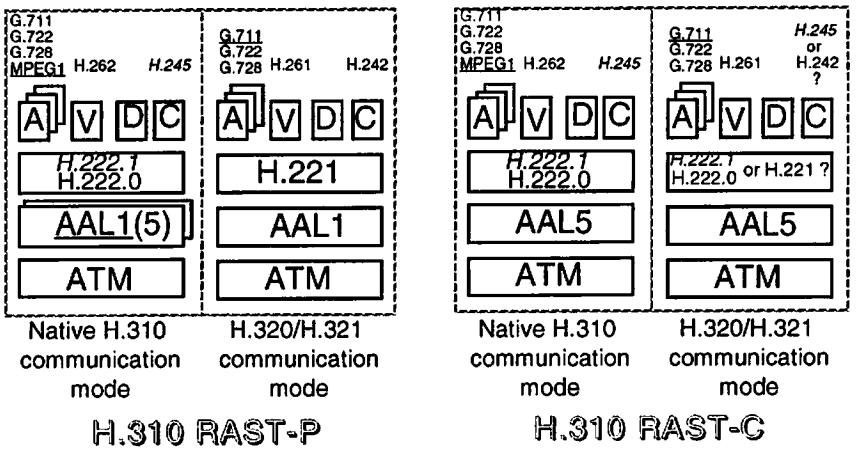
END

G and H-series Recommendations for audiovisual communication systems

Rec.	Title	Date	Status
G.711	Pulse code modulation (PCM) of voice frequencies	1988	revision approved
G.722	7 kHz audio-coding within 64 kbit/s	1988	approved
G.723.1	Dual rate speech coder for multimedia communication transmitting at 5.3 & 6.3 kbit/s	Nov. 1995	decided
G.728	Coding of speech at 16 kbit/s using low-delay code excited linear prediction	1992	approved
H.221	Frame structure for a 64 to 1920 kbit/s channel in audiovisual teleservices	Jul. 1995	revision approved
H.222.0	Information technology - Generic coding of moving pictures and associated audio information: Systems (common text with ISO/IEC 13818-1)	Jul. 1995	approved
H.222.1	Multimedia multiplex and synchronization for audiovisual communication in ATM environments	Nov. 1995	decided
H.223	Multiplexing protocol for low bitrate multimedia communication	Nov. 1995	decided
H.225.0	Media stream packetization and synchronization on non-guaranteed Quality of Service LANs	May 1996	to be decided
H.242	System for establishing communication between audiovisual terminals using digital channels up to 2 Mbit/s	Nov. 1995	revision decided
H.245	Control protocol for multimedia communication	Nov. 1995	decided
H.261	Video codec for audiovisual services at p x 64 kbit/s	Mar. 1993	revision approved
H.262	Information technology - Generic coding of moving pictures and associated audio information: Video (common text with ISO/IEC 13818-2)	Jul. 1995	approved
H.263	Video coding for low bitrate communication	Nov. 1995	decided
H.310	Broadband audiovisual communication systems and terminals	May 1996	to be decided
H.320	Narrow-band visual telephone systems and terminal equipment	Nov. 1995	revision decided
H.321	Adaptation of H.320 visual telephone terminals equipment to B-ISDN environments	Nov. 1995	decided
H.322	Visual telephone systems and terminal equipment for Local Area Networks which provide a guaranteed Quality of Service	Nov. 1995	decided
H.323	Visual telephone systems and equipment for Local Area Networks which provide a non-guaranteed Quality of Service	May 1996	to be decided
H.324	Terminal for low bitrate multimedia communication	Nov. 1995	decided
ISO/IEC 11172-3	Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s - Part 3: Audio	1993	published







H-series audiovisual terminals in different network environments

Notes to the figure "H-series audiovisual terminals in different network environments"

Note 1 - All possibilities of interworking are indicated; some combinations might not be practical.

Note 2 - Interworking between different networks are through Interworking Functions and/or Gateways which are not included in this diagram.

Note 3 - Signalling protocol stacks are note indicated.

Note 4 - Underlined coding is mandatory when multiple coding laws are indicated.

Note 5 - Normal: already established (except H.32P/M which is under study)
Italic: decided in November 1995
Shadow: to be decided in May 1996

Interworking scenarios
(Excerpt from Section 5.2/AVC-854R)

Stimulated by AVC-847, the meeting considered interworking scenarios of H.310, H.323 and H.324 with H.320 accommodated in N-ISDN and reached the following function allocations:

Functions	H.310 RAST-C		H.323		H.324	
	T	G	T	G	T	G
G.711 audio coding	X		X			X
H.261 video coding	X		X		X	
Data	X		X		X	
Multiplex		X		X		X
H.242 control protocol		X		X		X
Network adaptation (bit rate, AAL, etc.)		X		X		X

Note 1 - T: Terminal, G: Gateway
Note 2 - Gateway for H.324 is called "Interworking Adapter."

- It is a common understanding that audio, video and data source codings should be in the terminal to avoid additional delay and quality degradation due to transcoding.
- Other functions may be in the gateway for conversion.
- Legacy LAN emulation on the ATM-LAN will allow coexistence of H.323 and H.310 RAST-L terminals on the same ATM-LAN. This needs further consideration as another interworking situation.
- There was some discussion if the gateway should be service specific or service independent. This also needs further consideration.

END