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: H.322 Editor (G Morrison, BT Labs)
Title: Update of Draft Recommendation H.322

Appended is an updated draft of Recommendation H.322 in response to comments from the SG15 WP1 meeting in February 1995. These are reproduced, below in italics, from Annex 1 to the report of that meeting by the Rapporteur (Mr Okubo) as emailed to the reflector on 24 February 1995. A brief description of the action taken follows each comment.

All instances of the expressions H.32X, H.32Y, H.32Z.1 and H.32Z.2 have been replaced by H.310, H.321, H.322 and H.323 respectively.

Titles have been added or reworded to the numbering lines below all figures.

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1) Summary - addition

This Recommendation H.32Z.1 covers the technical requirements for narrow-band visual telephone services defined in H.200/AV.120-Series Recommendations, in those situations where the transmission path includes one or more Local Area Networks (LAN), each of which is configured and managed to provide a guaranteed Quality of Service (QoS) equivalent to that of N-ISDN such that no additional protection or recovery mechanisms beyond those mandated by Rec. H.320 need be provided in the terminals. It is noted that projected Recommendation H.32Z.2 addresses the use of some other LANs which are unable to provide the underlying performance assumed by this H.32Z.1 Recommendation.

This summary has been added.

2) Section 1 - addition

After the third paragraph:

{Editor's note: Reference to IEEE and ANSI standards are to be replaced with corresponding international standards if available.}

An editor's note has not been added because it is thought that corresponding international standards are not available and the note would have to be removed again very soon. However, the editor welcomes any information to the contrary and, if received, will make any necessary replacements.

3) Section 1 - deletion

Sixth paragraph third last sentence

"and without involving the gateway"

Sixth paragraph last sentence

"The gateway may be omitted if communication with terminals not on the same LAN is not required."

The whole paragraph now reads:

"Systems and terminal equipment complying with Recommendations H.32Z.1 and H.32Z.2 are able to interwork with each other and with those complying with Recommendations H.320 and H.32Y. The concept is shown in Figure 1/H.32Z.1 in which any terminal can be connected to any other. The H.32Z.1 or H.32Z.2 gateway unit provides an interconnection between the LAN and the Wide Area Network (WAN) which may be N-ISDN or B-ISDN or both. An H.32Z.1 terminal communicates with another H.32Z.1 terminal on the same LAN directly. The gateway may be connected via N-ISDN or B-ISDN to other gateways and LANs to provide communication between H.32Z.1 terminals which are not on the same LAN. "

Editor is invited to come up with better wording since the deletion was the simplest way to meet the questions of the WP1/15 participants (S. Okubo).

The two deletions have been made. The term H.32Z had been deliberately used in the previous version to cover both H.32Z.1 and H.32Z.2. Because this seems no longer possible after the renumbering to H.322 and H.323, the paragraph has been reworded slighlty. It attempts to limit its scope to H.322 while still informing the reader about H.323.

4) Section 2 - correction

"H.32Z" in the second paragraph and Figure 3 should read "H.32Z.1."

These changes have been made. The sentiments are equally relevant to H.323.

5) Section 2 - deletion

The last sentence in the second paragraph: "Any other N-ISDN terminal may be substituted for the H.320 terminal."

Editor is invited to come up with better wording since the deletion was the simplest way to meet the questions of the WP1/15 participants (S. Okubo).

The intention here was to echo the point (in the paragraph immediately preceding Figure 1) that H.322 does not depend on any particular characteristics of H.320 in the sense that the same Adapter Unit, LAN and Gateway without modification can support generic ISDN terminals. This will not be the case for H.323 in which the Adapter Unit, the Gateway and perhaps the LAN protocols must include some H.320-specific parts and will likely not support the use of generic N-ISDN devices over the LAN. The original sentence has been deleted but new wording is proposed and placed below Figure 3.

INTERNATIONAL TELECOMMUNICATION UNION

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DRAFT H.322

(11 May 95)

LINE TRANSMISSION OF NON-TELEPHONE SIGNALS

VISUAL TELEPHONE SYSTEMS AND TERMINAL EQUIPMENT FOR LOCAL AREA NETWORKS WHICH PROVIDE A GUARANTEED QUALITY OF SERVICE

DRAFT ITU-T Recommendation H.322

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 1 (Helsinki, March 1-12, 1993)

ITU-T Recommendation H.322 was prepared by the ITU-T Study Group 15 (199x-199x) and was approved under the WTSC Resolution No. 1 procedure on the xxth of xxxx 199x.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

SUMMARY

This Recommendation covers the technical requirements for narrow-band visual telephone services defined in H.200/AV.120-Series Recommendations, in those situations where the transmission path includes one or more Local Area Networks (LAN), each of which is configured and managed to provide a guaranteed Quality of Service (QoS) equivalent to that of N-ISDN such that no additional protection or recovery mechanisms beyond those mandated by Rec. H.320 need be provided in the terminals. It is noted that projected Recommendation H.323 addresses the use of some other LANs which are unable to provide the underlying performance assumed by this H.322 Recommendation.

CONTENTS

VISUAL TELEPHONE SYSTEMS AND TERMINAL EQUIPMENT FOR LOCAL AREA NETWORKS WHICH PROVIDE A GUARANTEED QUALITY OF SERVICE

(Place, 199x)

The ITU,

considering

the widespread adoption of and the increasing use of the H.320 Recommendation for videophony and videoconferencing services over networks conforming to the N-ISDN characteristics specified in the I series Recommendations,

appreciating

the desirability and benefits of enabling the above services to be carried, wholly or in part, over Local Area Networks while also maintaining the capability of interworking with H.320 terminals

and noting

the characteristics and performances of the many types of Local Area Network which are of potential interest

recommends

that systems and equipment meeting the requirements of the H.322 or H.323 Recommendations are utilized to provide these facilities.

1 Scope

This Recommendation H.322 covers the technical requirements for narrow-band visual telephone services defined in H.200/AV.120-Series Recommendations, in those situations where the transmission path includes one or more Local Area Networks (LAN), each of which is configured and managed to provide a guaranteed Quality of Service (QoS) equivalent to that of N-ISDN such that no additional protection or recovery mechanisms beyond those mandated by Recommendation H.320 need be provided in the terminals. Pertinent parameters are the data error and loss properties and variation of transit delay. Examples of suitable LANs are:

Integrated Services (IS) LAN: IEEE 802.9 Isochronous services with Carrier sense multiple access with collision detection (CSMA/CD) Media access control (MAC) service.

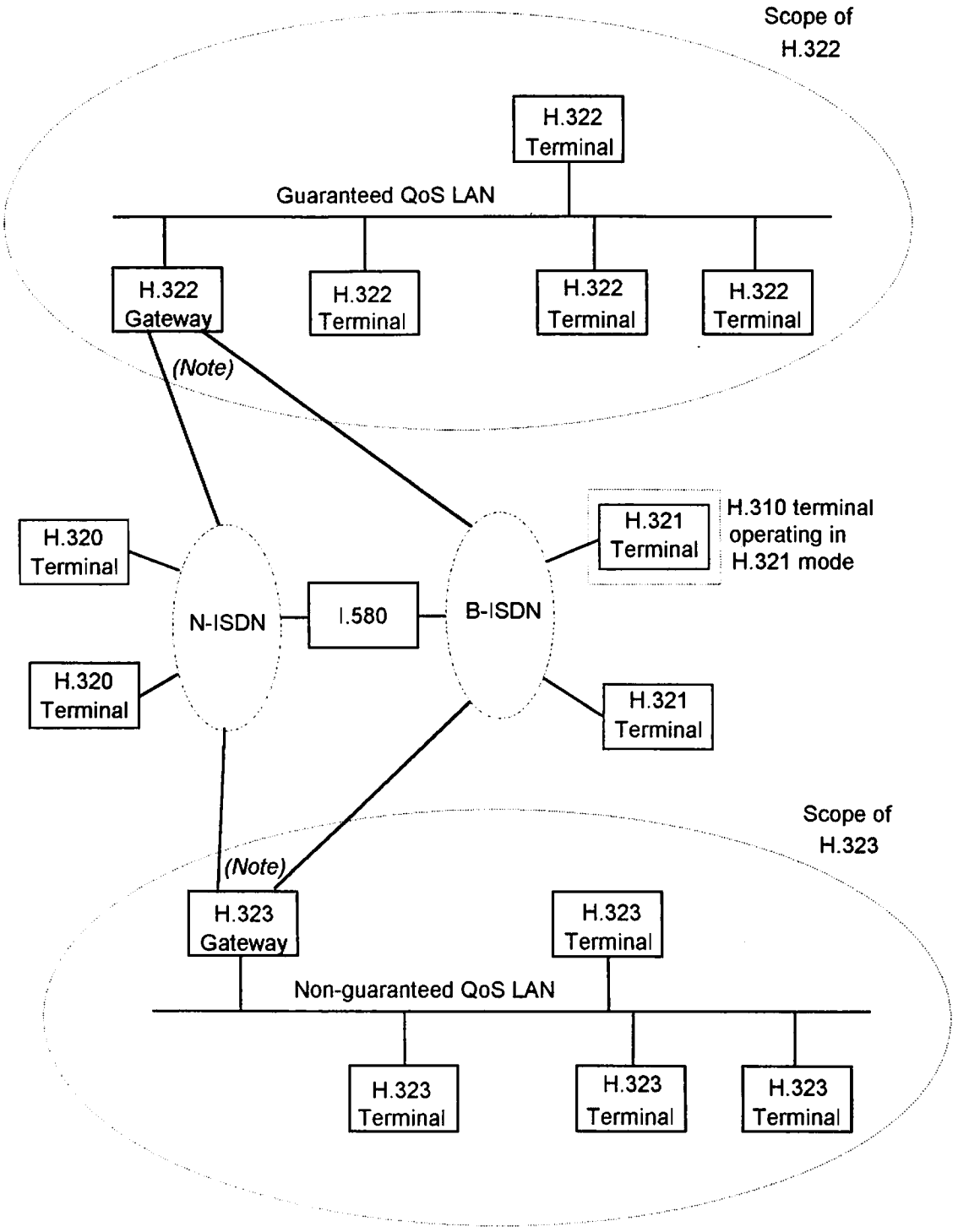
ANSI X3T9.5 FDDI-1 Synchronous and FDDI-2. However, although these FDDI LANs offer satisfactory QoS they do not themselves provide standardised means of identifying the intended called terminal. For these FDDI and any other LANs which would otherwise be suitable for this Recommendation H.322, the procedures for terminal addressing defined in Recommendation H.323 shall apply in addition to the provisions of this H.322 Recommendation.

The H.322 Recommendation does not encompass ATM LANs because they are within the scope of Recommendation H.321.

Recommendation H.323 addresses the use of some other LANs which are unable to provide the underlying performance assumed by this H.322 Recommendation.

Systems and terminal equipment complying with Recommendation H.322 are able to interwork with each other and with those complying with Recommendations H.320, H.321 and H.323. The concept is shown in Figure 1/H.322 in which any terminal can be connected to any other. The H.322 gateway unit provides an interconnection between the LAN and the Wide Area Network (WAN) which may be N-ISDN or B-ISDN or both. A H.322 terminal communicates with another H.322 terminal on the same LAN directly. The gateway may be connected via N-ISDN or B-ISDN to other gateways and LANs to provide communication between H.322 or H.323 terminals which are not on the same LAN.

Although this Recommendation H.322 specifically addresses visual telephone systems, the methods used do not depend on the content of the signals carried. Consequently this Recommendation has more general applicability to connecting terminals, originally designed for N-ISDN, over LAN or hybrid LAN and ISDN networks.



Note. A gateway may support only the N-ISDN or B-ISDN connection.

FIGURE 1/H.322 Scope and interworking capabilities of H.322

2 Terminal Equipment

Figure 2/H.322 is a block diagram of the Rec. H.322 terminal. All elements are identical to those specified in Rec. H.320 except for the LAN interface.

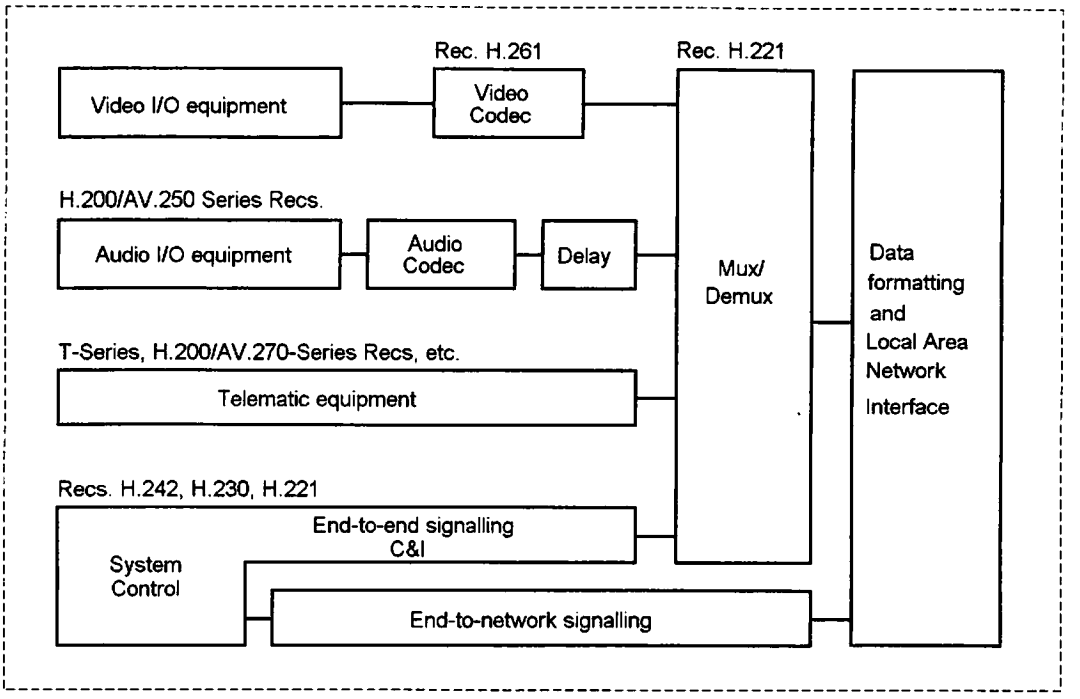


FIGURE 2/H.322 Block diagram of H.322 terminal elements

As illustrated in Figure 3/H.322 an H.322 terminal may be implemented as an integrated unit or as the combination of an H.320 terminal and an adapter unit.

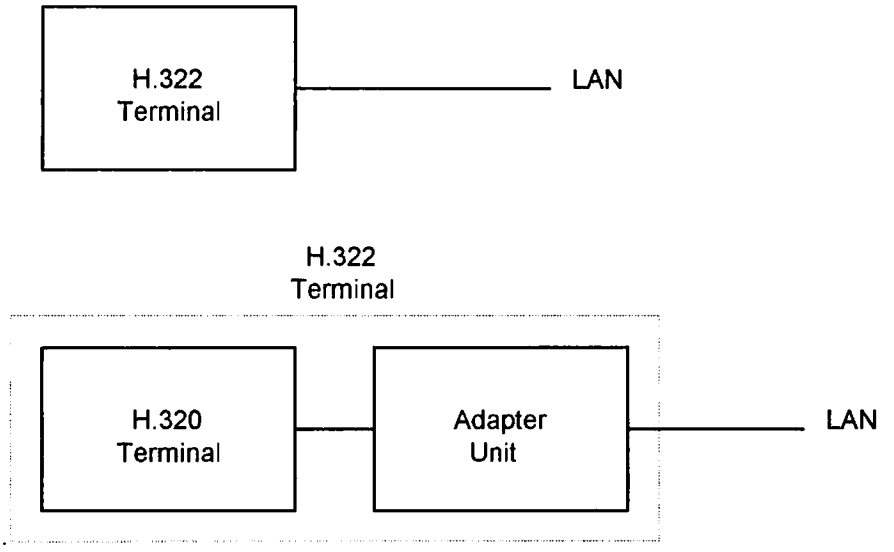


FIGURE 3/H.322 Alternative H.322 terminal implementations

Note: The Adapter Unit of Figure 2/H.322 and the H.322 Gateway of Figure 1/H.322 perform no function which is specific to the audiovisual nature of the signals they handle. The same Adapter Unit and Gateway may support the connection of other N-ISDN terminals in place of the H.320 terminal in Figure 2/H.322, but such use is outside the scope of Recommendation H.322.

3 H.322 Gateway

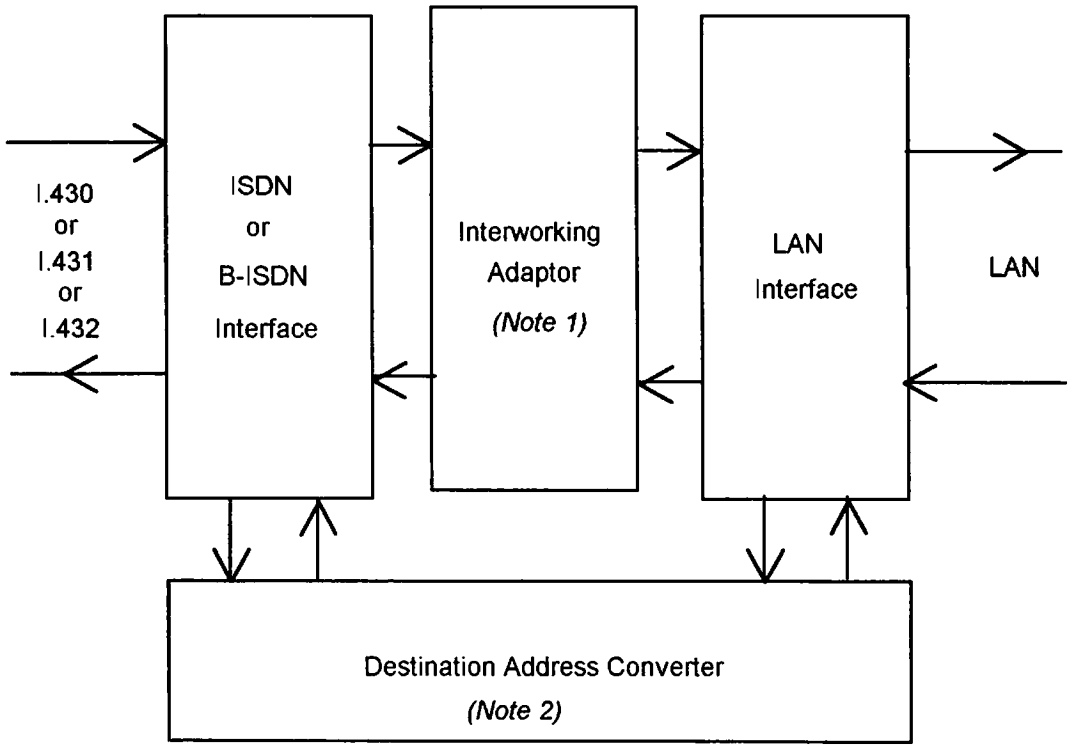
A block diagram of the H.322 gateway device is shown in Figure 4/H.322. There are four principal functions:

Interface to the LAN

Interface to the WAN (I.430 or I.431 for N-ISDN or I.432 for B-ISDN).

Conversion of the destination address of the called H.322 terminal. This is required only if the LAN does not support Recommendation E.164.

Interworking Adapter if the WAN is B-ISDN. The basic functions required are essentially those specified in Recommendation I.580 for interworking between N-ISDN and B-ISDN.



Note 1. Not present in some gateways
Note 2. Required only if LAN does not directly support Rec. E.164

Figure 4/H.322 Block diagram of H.322 gateway elements

The number of simultaneous connections which the H.322 gateway is able to provide is not subject to standardisation.

A H.322 gateway may also contain the functionality of a Multipoint Control Unit (MCU) as specified in Recommendation H.243. This is not a mandatory requirement of the H.322 Recommendation.

A H.322 gateway may also contain the functionality specified in Recommendation H.331 to simultaneously broadcast to a number of terminals. This is not a mandatory requirement of the H.322 Recommendation.

4 Dependency on Recommendation H.320

All the provisions of all paragraphs subsequent to and including 3.2 of Rec. H.320 are an integral part of this Recommendation.