AVC - 884

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Experts Group for Video Coding and Systems in ATM and Other Network Environments

STUDY GROUP 15
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Title: Q.931 Signaling in H.323

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Introduction:

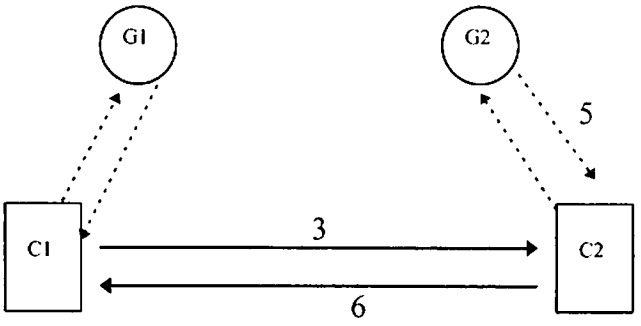
There has been a great deal of fine work put into the current (November 6 Draft) version of H.323 document. It reflects much of the refinements that were discussed at the meeting in Yokosuka. The document submitted by PicTel (Ptel 10) captured much of the multipoint solutions discussed 'off-line' in Japan.

The bulk of the explanations in section 7 of the H.323 document revolves around the H.22Z Gatekeeper PDUs and the Q.931 connection signaling. It would appear as though much of this complexity and awkwardness could be removed if we separated the Q.931 connection setup signaling from the H.22z Gatekeeper signaling.

Executive Summary:

The proposal is made to allow Q.931 signaling to occur between terminals over a reliable channel, as agreed to in Japan. H.22z signaling between the terminal and its Gatekeeper shall be via an independent and separate unreliable channel. The gatekeeper will not directly interpret or otherwise intervene in the Q.931 signaling.

The following scenario is proposed.



1. C1 sends H.22z PDU to G1 via unreliable transport (CRQ)
2. G1 sends H.22z PDU to C1 via unreliable transport (CCF/CRJ)
3. C1 sends Q.931 SETUP to C2 via reliable transport
4. C2 sends H.22z PDU to G2 via unreliable transport (CRQ)
5. G2 sends H.22z PDU to C2 via unreliable transport (CCF/CRJ)
6. C2 sends Q.931 CONNECT/DISCONNECT PDU to C1 via reliable transport

Note that the end-to-end connection setup occurs (strictly speaking) during steps 3 and 6 only. Steps 1-2 and 4-5 can occur independently from the Q.931 signaling. This allows the H.22z PDUs to use UDP sockets while the Q.931 can sit on TCP connections.
This model also allows either or both endpoints to operate in the absence of a gatekeeper without changing the protocol.

This model results in having 4 simple values that would be carried opaquely in the User-user field of the appropriate Q.931 PDUs.

Q.931 Setup message

Request_type - this would be set to 1 of 3 values (1=create,2=join, or 3=invite) to indicate the type of connection request.
ConferenceID - this is as stipulated in AVC-827 and Ptel10 (as agreed to in Japan). One modification is that if the above Request_type indicates a join, and this ID is 0, this is an 'ad-hoc' join. (This implies that if the called terminal is not currently in a conference, it should create one, and join the caller to it).
GateKeeperAddress - this is as stipulated in AVC-827.
OriginatingID - this is stipulated in AVC-827.

The Q.931 Disconnect message (mapping to Connect Reject in AVC-827) would require two additional fields:

ReasonCode - this would be used to 'tunnel' H.323 reason codes back through Q.931
MCAddress - this would be used if a join request was made for a pre-existing conference but the called node was not the MC.

Other than the above additions to the User-user field, no other changes would be required of the Q.931 PDUs or protocol.