ITU Telecommunication Standardization Sector Document AVC-1015
Study Group 15 V1.0
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SOURCE :Ofer Shapiro/Radvision[1].
TITLE : Direct In ward Dialing In H.323/H.320 Gateway using TCS-4 command.
PURPOSE: Discussion.

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1. Introduction.

A gateway between H.323 and H.320 systems, must obtain H.323 alias address from a calling H.320 terminal. Up to now mechanisms for this was not fully standardize. In the May-June meeting of SG15/WP1 a code word "TCS-4" was added to H.230 with the meaning of "enter extension address". The purpose of this document is to suggest usage convention for this code word.

The proposed method support also complex call scenarios. To support that, another suggestion to add TCS-4 parallel in H.245 was submitted (AVC-1013).

2. Usage of TCS-4.

2.1 Incoming call from H.320.

When incoming call from H.320 arrives at the gateway (see Figure 1), the GW may send a TCS-4 command to calling terminal. If the terminal supports this command it should respond with the appropriate IIS string as described in H.230.

- If this string contains only characters from the set "0123456789#,*"(=E164 set) the gateway will use this string on H.323 side as E164 address.
- If this string contains characters other the E.164 set, but all map into BMP, the gateway will use them as H323IDstring.
- If none of the above holds, actions will be left to discretion of the manufactures. A possible solution would be to open audio channel and prompt the far user, to supply correct address using DTMF.

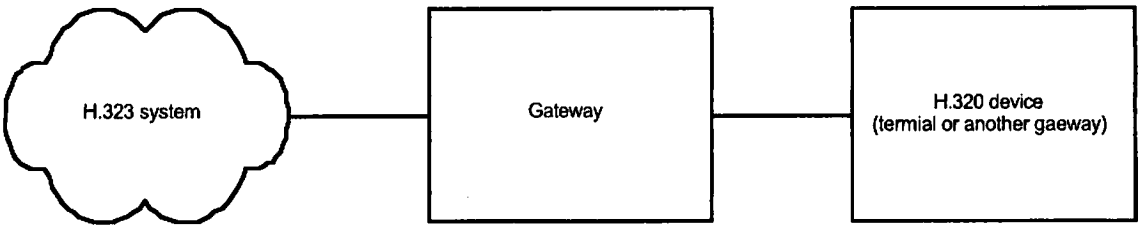

Figure 1

2.2 Outgoing Call to H.320.

Referring once again to Figure 1, when a GW receives an outgoing call to H.320 destination from an H.323 terminal (or another gateway). The SETUP command include as a minimum a phone number. It might also include an extension address. After the gateway made the H.320 connection, If it receives a TCS-4 command from destination, the following will occur:

- If extension address was previously supplied by origin and not used yet, the gateway may send it as response to TCS-4 in an IIS string.
- If extension address was not supplied or supplied and used, the gateway shall send to LAN origin H.245 command enter extension address (see AVC-1013), if H.245 channel is already connected. Terminal receiving this message may send appropriate response.

2.3 Complex calls.

Complex calls is a call in which more one SCN connection is formed. This might suggest more that one DID procedure.

To allow for complex calls to occur. A gateway that receives a TCS-4 or its H.245 equivalent, should be capable relay it to other party (LAN connection for TCS-4 and SCN connection for H.245) as described, more than once. The GW may also respond by an IIS or its H.245 equivalent if it have some cashed information.

Probably the most common case of using TCS-4 would be an H.323 terminal calling another H.323 terminal via 2 gateways as Shown in Figure 2. In this case the origin terminal will send SETUP message to its gateway (A) supplying extension address, which will form H.320 connection with gateway (B). B will send TCS-4 to A, which will respond with IIS string, which B will use to contact destination terminal.

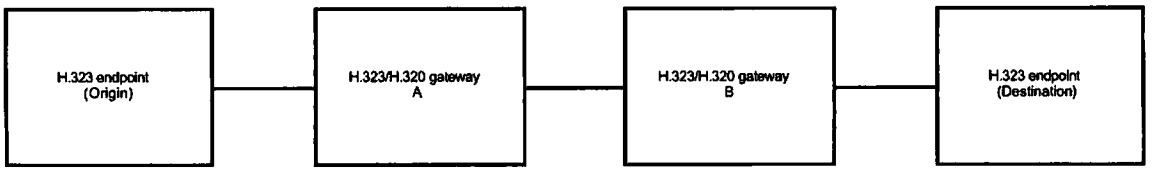

Figure 2

The mechanism suggested will further support a LAN destination that is also a gateway. The destination can send H.245 TCS-4 equivalent which B will forward to A and then to the origin endpoint. The response will be relayed in the same manner.
This guarantee an end to end transmission of extension address.
This is a generalization of 2.1 and 2.2. Support of this is recommended, although probably not needed at first. support 2.1 and 2.2 however, is very important, as it would be useful from the early phases of H.323 evolution.