ITU Telecommunication Standardization Sector
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Source: Istvan Sebestyen (Siemens)
Title: On the use of G.723.1 and G.729 in H.320

Purpose: Discussion

The background of this contribution is best presented giving the reader the full e-mail correspondence on this matter (please read ANNEX 1 first).

In general in several communication terminal standards (such as facsimile or videophone, or even modems) there is often more than one standard component is included to provide similar, but improved functionality.

So in a Facsimile Gr. 3 terminal there is a mandatory modem of V.27ter included, but optionally in practice V.17 (14.4 kbit/s), V.29 (9.6 kbit/s). The fallback philosophy of the modems is hierarchical, meaning if a V.17 modems is included into the facsimile terminal than also A V.29 and a V.27bis modem must be included. In the proposed new Annex of H.320 for video compression the same hierarchical philosophy applies, when the H.262 option is included, then it also must include H.263 option and H.261. This makes sense in the case of video, because also the functionalities are "hierarchical" (gradual improvement of image quality), and also the technologies are closely related to each other.

At the same time while a facsimile terminals must include the MH (T.4) image compression method (as common basis for all facsimile communication), it may additionally include one or several other optional image compression methods, such as MR (T.4), MMR (T.6), JPEG (T.81), JBIG (T.82). The nature of those image compression methods (and also the type of images they are targeted at) are quite different, thus there is no hierarchical approach applied. So one fax machine can have T.81 and T.4, the other T.82, T.6 and T.4 etc. The only common base of communication is MH (T.4), when nothing else can be selected this will always work.

We believe that the same philosophy should be adopted for the selection of the new H.320 speech coder options. G.711 must be included in all terminals. So if nothing else works this will be the fall back. However all other speech/audio coders currently available and currently under development shall not be ordered in a hierarchical rank. First the functionality of the coders are quite different (e.g. the new wideband coding ("quality") versus G.723.1 ("compression")), but also the techniques applied. So, the range of speech/audio coders be included in a H.320 shall be determined by the market and by the manufacturers.

Annex 1 E-mail Communication between Mr. Okubo and Mr. Terschluse (Siemens) on the use of G.723.1 and G.729 in H.320

END

ANNEX 1
E-mail Communication between Mr. Okubo and Mr. Terschluse (Siemens) on the use of G.723.1 and G.729 in H.320

----- Begin Included Message -----

>From okubo@gctech.co.jp Tue Aug 6 12:14 MET 1996
Date: Tue, 6 Aug 96 19:07:50 JST
From: okubo@gctech.co.jp (Sakae Okubo)
To: markust@earl.hl.siemens.de
Cc: sg15.avc@research.kpn.com, h32z2-list@mtgbcs.lucent.com,
h243rap-list@mtgbcs.mt.att.com, SG15.LBC@research.kpn.com
Subject: H.320 plus G.723.1 and G.729
Content-Type: text
Content-Length: 2937

Dear Mr. Terschluse,

>>I just took a look at the H.320 revision from June 96. In table 2, I
>>can only see terminal types that support either both G.723.1 and
>>G.729 or none of these two.
>>
>>Is it right, that a terminal providing G.723.1 but not G.729 is not
>>supported in H.320?

Your question is right. We rushed to make the draft last June, this is the point we need careful review as indicated in the Editor's note under the title of TABLE 2/H.320. I distributed the following note when I placed the file at the ftp site:

--- note dated 18 Jun 96 ----

Please note that the following two Editor's notes:

1) Table 2/H.320

Relationship between new modes a2, a3, b4, b5, q4, q5 and definition of terminal types Xb? and Xq? needs review. The problem is that audio coding is not hierarchical except that G.711 being mandatory. Hence combinations of audio coding among G.722, G.728, G.723.1, G.729 have become large in number and difficult to express by Type Xb? form. The original definition was as follows:

Type Xb1 or Xq1 supports G.711 and G.728
Type Xb2/3 or Xq2/3 supports G.711, G.722 and G.728
Type Xb4 or Xq4 supports G.711
Type Xb5 or Xq5 supports G.711 and G.722

Perhaps we need reorganize Tables 2 and 3.

2) Syntax of picture_ITU-T_H320_extension in A.2

We need generalize it and consult with MPEG due to generic nature of H.222.0|ISO/IEC 13818-1.

--- end of note ---

>>What's the meaning of the "terminal types", are these values used in
>>H.221?
>>
>>I just took a very brief look at the corresponding H.221. It seems
>>to me like there are two different capabilities bits for G.723.1 and

>>G.729. So, would there be a problem for a terminal in an H.320
>>videophone if it supports G.723.1 and not G.729 (or vice versa)?

The terminal type was introduced to ease the description of the product as well as the Recommendation. Actual communication mode is negotiated and decided through the H.242 capability messages, hence terminal type does not appear in H.221. It is intended that H.320 can support only G.723.1 in addition to G.711, or only G.729 in addition to G.711 or any other combination as far as G.711 is included. Tables 2 and 3 should be reorganized in this direction.

I hope you could contribute to refining the specification toward my submission of white contribution by the end of November. Perhaps the Q.2&3/15 meeting in Eibsee during 24 - 27 September, which Dr. Sebestyen is kindly taking care of, would be a good chance to make a progress in this matter.

Best regards,

Sakae OKUBO (Mr.)
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----- End Included Message -----