International Telegraph and Telephone
Consultative Committee
(CCITT)
Question 4/XV

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STUDY GROUP XV - CONTRIBUTION NO. 27

SOURCE : SWEDEN
TITLE : DISCUSSION POINTS FOR THE 384 KBIT/S CODEC.

It is suggested that the following topics are discussed during the meeting

* Bit rates for audio and video
* Basic coding blocks for video
* Minimum solution standardization

Some ideas concerning these points are presented below.

1. BIT RATES

The allocation of different bitrates to different services in a general frame structure is described more in detail in COM XV No. D. 10

audio/data	64 kb/s	The upcoming CCITT standardized audio conference codec is suggested.
video	320 kb/s	Including error protection.

2. CODING BLOCKS

The basic coding blocks in a codec should be well established in order to be accepted as a suitable standard. Such coding blocks are:

* Filtering and subsampling
* DPCM
* Conditional replenishment
* Transform
* Variable length coding

In order to achieve sufficiently good picture quality it is probably necessary to use various types of adaptive schemes. The most well known concepts in this area are:

* adaptive quantization

* adaptive prediction (motion compensation is a special case)

3. MINIMUM SOLUTION

The coding algorithm should be chosen such that the freedom for implementation of new ideas is as high as possible ~~and that the standardized codec allows for future upgrading~~ *. Image enhancement techniques after decoding should for example not be standardized.

Simplicity and flexibility are important. It would for instance be convenient if the standard allows both low cost-low picture quality and high cost-high picture quality versions.

One way to achieve the above properties is to make use of side information instead of recursive updating of adaptive parameters in the codec. This strategy is also less sensitive to transmission errors. The coder then has the freedom to calculate the side information in a more or less sophisticated way, while the decoder only has to interprete the side information, instead of calculating it in a specific way.

* without conflicting with the standardized information stream.