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Title: SCENE CUT DETECTION METHOD (FOR INFORMATION)

1.Introduction

Many methods may be developed for scene cut detection, and any method can be used because the detection method has nothing to do with the compatibility.

An example of scene cut detection methods is shown in this document. This method is realized very easily since it is based upon intra/inter mode decision algorithm.

2.Basic Idea

At scene cut instant, it is expected that many blocks are coded with intra mode. Therefore, it can be used in scene cut detection.

In Fig.1, an example of scene cut detector is shown. Intra/inter mode for each block is determined using interframe prediction error signals and original signals. These two signals are delay-compensated, for example 2 or 3 GOBs, which correspond to the detection time. Scene cut detector counts the number of intra mode blocks in one GOB. If the number of intra block is larger than a threshold, and it continues over a few GOBs, it is decided that scene cut has occurred.

In scene cut mode, the switch A selects intra mode over one frame time. Otherwise, the switch A is controlled by the delay-compensated intra/inter mode signal on a block-by-block basis.

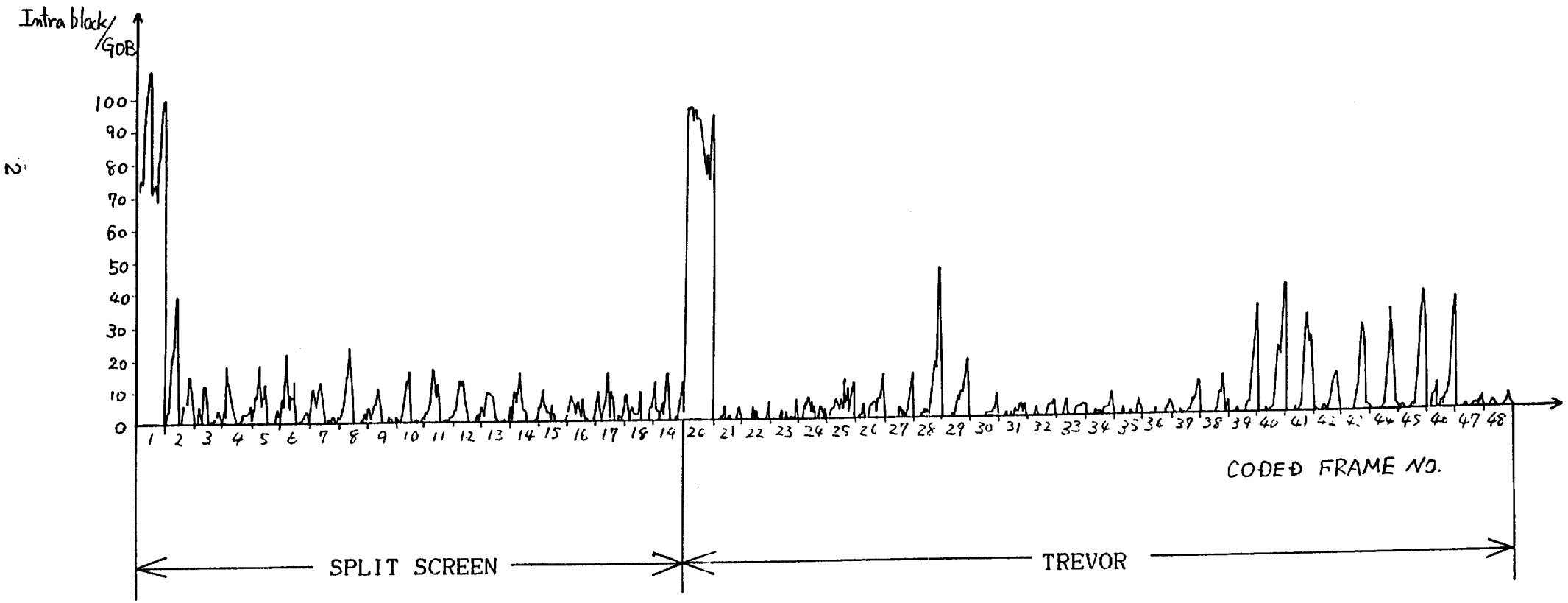
3.Experiment

In Fig.2 the number of intra mode blocks measured in a GOB is shown for motion video sequence "Split-Trevor". Data is plotted for each GOB. Horizontal axis is scaled with coded frame number. In this experiment, scene cut should be detected at the first coded frame and 20th coded frame. If the threshold is chosen to be 40 and the decision time 3 GOBs, scene cut can be detected.

4.Conclusion

A practical scene cut method detection is provided. There will be many other methods for the detection. However, this example method will show that the present simulation work using a priori knowledge for scene cut can be actually implemented.

Fig.2 Number of Intra Mode Blocks



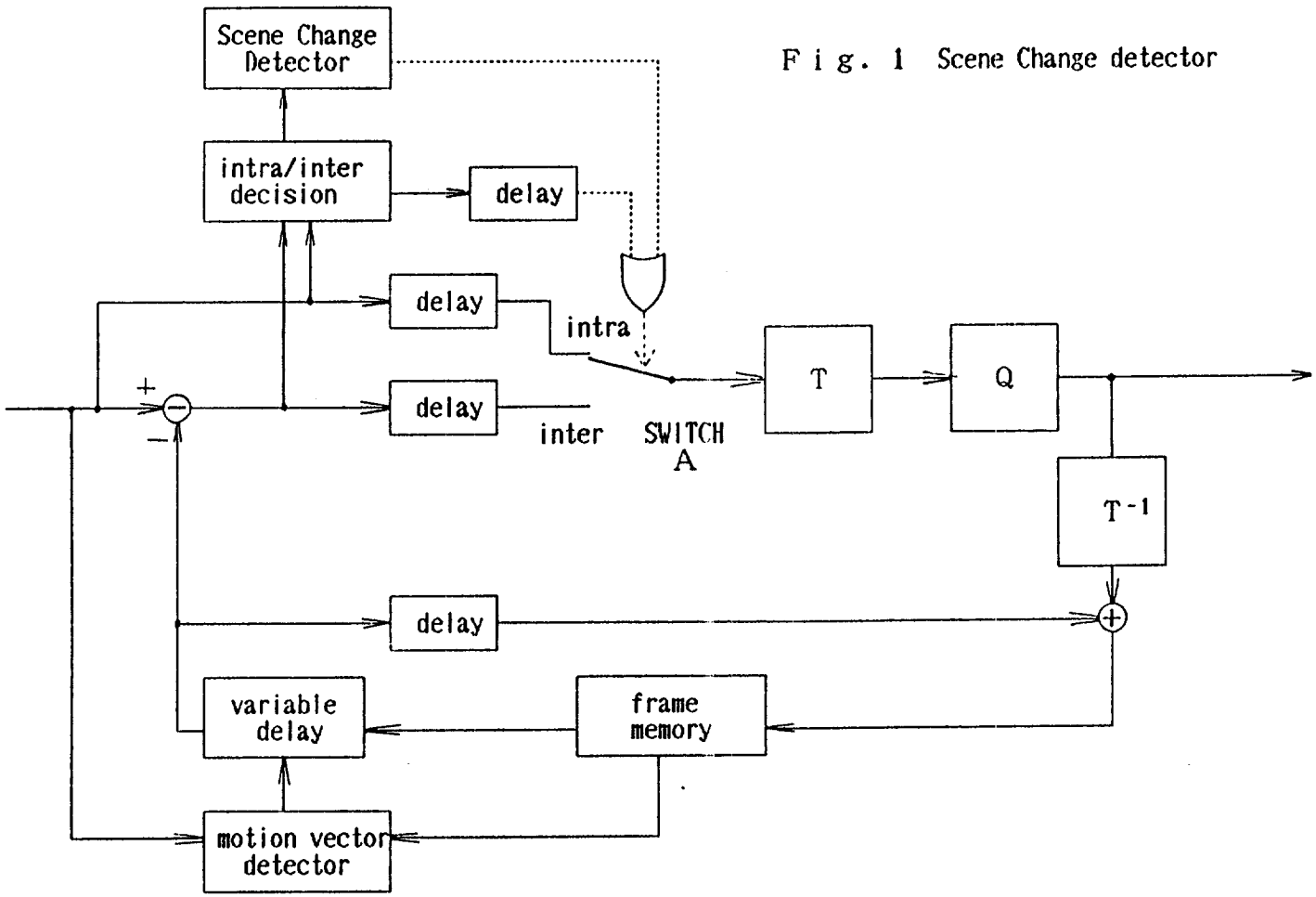


Fig. 1 Scene Change detector