

DIGITAL VIDEO ENCODING METHOD FOR ENCODING A DIGITAL VIDEO IMAGE

This invention pertains to methods of digital video encoding and can be used for efficient encoding of video data in video file formats, as well as in stream and broadcast video formats.

The digital image, such as video, TV image, static image or image generated using VCR or PC, contains of pixels located along horizontal and vertical lines. One image frame usually contains tens of thousands pixels. Each pixel usually contains information on brightness and color. The unencrypted digital image contains a big amount of information. A number of encoding methods, such as the JPEG, MPEG, and H.263 standards, were developed in order to decrease the amount of data to be transferred. Typical video encoder divides frames of the source video sequence into rectangular areas or blocks that are encoded in internal or intermediate mode. Blocks are encoded independently, using a certain type of transformation coding, such as Discrete Cosine Transformation (DCT) method.

However, encoding involving division of frames of the source video sequence into rectangular areas or blocks has some disadvantages. One of these disadvantages is quality loss of the digital video image.

The technical result of the claimed invention is aimed at increasing the quality of the digital video obtained by encoding the source digital video.

This technical result is achieved by encoding the source digital video, where the source digital video can be provided in any formats and with any resolutions exceeding the required ones, e.g.:

- Apple ProRes 4444
- Apple ProRes 422 (HQ)
- Apple ProRes 422
- Apple ProRes 422 (LT)
- Apple ProRes 422 (Proxy)
- Full HD (1920x1080)
- HD (1280x720) etc.

At the encoding stage, the source digital video is divided into a set of video frames, and each video frame from this set of video frames is divided into a set of blocks consisting of pixels.

At least one encoded video is generated from the video frame sequence according to the following procedure:

- Every subsequent frame is added to the encoded video, if it is completely different from the previous video frame.
- If every subsequent video frame repeats the previous video frame, then the command to repeat the previous frame is added to the digital video being generated, instead of the subsequent video frame.
- If every subsequent video frame partially repeats the previous video frame, then the command to repeat the previous frame with consideration of differing blocks is added to the digital video being generated.

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