(19) **United States**

(12) **Patent Application Publication** (10) Pub. No.: **US 2023/0232014 A1**

Wu et al. (43) Pub. Date: **Jul. 20, 2023**

(54) **CODE RATE CONTROL METHOD AND APPARATUS, IMAGE ACQUISITION DEVICE, AND READABLE STORAGE MEDIUM**

(71) Applicant: **ZHEJIANG UNIVIEW TECHNOLOGIES CO., LTD.,** Hangzhou (CN)

(72) Inventors: **Hui Wu**, Hangzhou (CN); **Kesen Yan**, Hangzhou (CN); **Qiong Xu**, Hangzhou (CN)

(21) Appl. No.: **16/645,211**

(22) PCT Filed: **Aug. 9, 2018**

(86) PCT No.: **PCT/CN2018/099665**

§ 371 (c)(1),
(2) Date: **Jun. 9, 2020**

(30) **Foreign Application Priority Data**

Sep. 6, 2017 (CN) 201710797249.3

Publication Classification

(51) **Int. Cl.**
H04N 19/147	(2006.01)
H04N 19/176	(2006.01)
H04N 19/159	(2006.01)
H04N 19/105	(2006.01)
H04N 19/167	(2006.01)
H04N 19/137	(2006.01)
H04N 17/00	(2006.01)

(52) **U.S. Cl.**
CPC *H04N 19/147* (2014.11); *H04N 19/176* (2014.11); *H04N 19/159* (2014.11); *H04N 19/105* (2014.11); *H04N 19/167* (2014.11); *H04N 19/137* (2014.11); *H04N 17/002* (2013.01); *H04N 7/183* (2013.01)

(57) **ABSTRACT**

The embodiments of the present disclosure provide a code rate control method and apparatus, an image acquisition device, and a readable storage medium. The method comprises: acquiring the gain and exposure time of an image to be encoded from an image processing module of an image acquisition device; obtaining corresponding reference distortion degree according to the gain and exposure time of said image; calculating the difference between the distortion degree in a characteristic region of said image and the reference distortion degree; calculating a distortion tolerance degree of macro blocks constituting said image according to the difference between the distortion degree in the characteristic region of said image and the reference distortion degree; performing macro block predictions on the respective macro blocks in said image, to obtain an optimum macro block prediction mode; and encoding said image, which corresponds to the optimum macro block prediction mode, in order to control the code rate of said image. By means of the cooperation of image processing and encoding, said method can achieve code rate control while guaranteeing that the encoded image has a good subjective presentation.

Start

Acquiring a gain and an exposure time of an image to be encoded. — S220

Obtaining a corresponding reference distortion degree according to the gain and the exposure time of the image to be encoded. — S230

Calculating a difference between a distortion degree of a feature region in the image to be encoded and the reference distortion degree. — S240

Calculating a distortion tolerance of each macroblock constituting the image to be encoded from the difference between the distortion degree of feature region in the image to be encoded and reference distortion degree — S250

Performing prediction on each macroblock in the image to be encoded based on the distortion tolerance of each macroblock constituting the image to be encoded to obtain an optimal macroblock prediction mode. — S260

Encoding the image to be encoded corresponding to the optimal macroblock prediction mode to complete a bit rate control of the image to be encoded. — S270

End