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DECODING OF THE COMPRESSED DYNAMIC IMAGES IN INFORMATION SYSTEMS OF AN OBJECTIVE CONTROL

Basic principles for the construction of the method of the compressed dynamic images of the steady background. Reconstruction of the compressed dynamic images of the steady background is proposed to perform on the basis of: the reconstruction of the matrix binary mask, the dynamic component of the reconstruction, reconstruction of matrix signs. Recovery technology of the current frame in the original dynamic space without loss of an information on the basis of the recovery of the current differentially represented frame and the information about the basic frame is built.

Keywords: *reconstruction, postfiltering, matrix of signs, dynamic component, binary mask matrix, current frame.*

In order to increase the efficiency of information and communication systems of objective video you must use methods of decoding compressed images to retain their information content. One of the main activities for this task is the development and application of new methods to restore the compressed data to significantly reduce data transfer times via communication channels without loss of information. In our case, to take into account the fact that video frames are formed under conditions of stationary video cameras. Therefore, you must develop technology reconstruction of compressed dynamic images with stationary background areas based on differential-before the current frame. Hence the purpose of the research was to develop a method of decoding the compressed video frames of stationary background without losing information in the communication objective control systems.

Dynamic image decompression process stationary background includes the following steps: the first step is to reconstruct a matrix binary mask; the second activity is the reconstruction of the dynamic component; the third step in the reconstruction of the matrix of marks. Restore matrix binary masks should be

primarily due to the fact that the reconstruction of the dynamic character of the matrix component and cannot be recovered without a binary mask.

To perform the first action you want to retrieve information about the binary mask that allows you to: 1. Define the position of dynamic and stationary components in the differential frame. 2. Determine the number of elements of dynamic and stationary components. 3. Get the structural elements necessary for the reconstruction of a binary vector of pointers. The process of reconstruction matrix binary masks is to perform the following steps:

The second stage. On the basis of the information received on the facilities of the alphabets you can go to the lengths of binary decoding series. This is the power of the alphabets and that set expressions and; is the condition that a matrix binary masks a series of ones and zeros are alternated with each other. This means that a series of zeros is a series of units, and vice versa. These conditions allow to reconstruct the binary mask without loss of information.

Consider the second action. Decoded binary mask allows you to determine the number and positions of elements of the dynamic component of the differential frame. The number of elements of the dynamic component is defined as the number of units of a binary mask. For the reconstruction of the dynamic component, use the following information: 1) information on the magnitude of the threshold filtering; 2) the size of the array is partitioned dynamic component;

3) величины адаптивных оснований, количество которых определяется на основе информации о суммарном количестве элементов динамической составляющей и размере массивов; 3) values of adaptive reason, the amount of which is determined on the basis of information on the total number of elements of dynamic content and size of arrays; 4) values of the codes generated for dynamic arrays of columns. The code is derived from a common coding constructs. If you have this information code word length is determined by the following formula:

$$L(u)_j = [\log_2 \lambda_u^{n_{дин}} - 1] + 1,$$

where is the number of digits in the code representation of the value of the position number, generated adaptive array for each row of the dynamic component;

-the accumulated product of reason u-th array dynamic component. Total length of the current coding dynamic array component is calculated according to a formula. 5) For known code word length can be considered to be information about the meaning of your code Adaptive-positional number. And then, on the basis of information on Adaptive basis and threshold filtering, you can go directly to the restoration of individual columns arrays dynamic component.

$$d'_{1,j} = \left[\frac{N(u)_j}{P_1}\right] - \left[\frac{N(u)_j}{\lambda_u \cdot P_1}\right] \cdot \lambda_u ; \quad d'_{m_{дин},j} = \left[\frac{N(u)_j}{P_{m_{дин}}}\right] - \left[\frac{N(u)_j}{\lambda_u \cdot P_{m_{дин}}}\right] \cdot \lambda_u$$

The formula for restoring the items column dynamic element has the following form; where is (1; j)-th element of the array dynamic component; -(j)-th element of the array dynamic component; – weighting factor 1-a position number; – a weight-element position mdin number.

After the reconstruction of the dynamic array of items in the column, you must restore them to the original dynamic range. For this purpose, postfiltracy, which causes the elements of the dynamic component in accordance with threshold filtering. To do this, the values of the elements of the dynamic component should be increased by the amount of the threshold that is specified by an expression. Such a procedure would get dynamic content with the original dynamic range. Full recovery of the dynamic component necessary for the reconstruction of the original frame, is in the case when information on the component.

Therefore, the third activity is associated with the reconstruction of the vector direction signs feature. Reconstruction of binary vector character pointers is conducted on the basis of the information on the power of the alphabet. This allows you to determine the length of the code view for multiple lengths of binary series that formula $L(r(h)) = [\log_2 r(h)_{max}] + 1$..

To determine the character positions in the frame of the image, use the structural similarity with a matrix binary masks, namely length and position of the series zero elements for the matrix character pointers are the same length and positions the series zero elements to matrix binary mask. Accordingly, a series of individual elements in a matrix binary mask indicates the position and length of the

negative elements of dynamic content. At the same time, a series of individual elements of a binary mask will indicate not only the negative elements of dynamic content, but also on positive values. These conditions allow for the reconstruction of a binary vector of pointers to characters without loss of information.

$$a_{i,j}^{(\xi+1)} = e_{i,j}^{(\xi+1)} + a_{i,j}^{(\xi)},$$

In the final phase on the basis of the information received can be to recover the current differential represented by frame. After receiving the differential frame on the basis of the information submitted on the base frame is provided by the construction of the current frame in the source dynamic space. This stage of the formula:, where is the (i, j) th element of the previous source frame; $e_{i,j}^{(\xi+1)}$ -(i; j)-th element of the current differential-the frame; $a_{i,j}^{(\xi+1)}$ -(i; j)-th element of the current frame in the source dynamic space.

Thus, research-based method for decoding the compressed background stationary dynamic images without loss of information.

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