Method of Processing of the Differentiated Images on the Basis of Formation and Coding of the Nonequilibrium Punched Numbers

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Abstract – **the necessity of development of technologies of processing of images on the basis of their differential representation is proved. The method of compression of images on the basis of formation and coding of the two-dimensional nonequilibrium punched numbers is developed. The system of rules for code formation is created, using the punched lexicography.**

Keywords - **the punched nonequilibrium item numbers, differentiation of images**.

I. INTRODUCTION

Feature of processing and information delivery consists in systems of space monitoring in limited power and dimensional possibilities of onboard systems. There are cases when delivery time will exceed admissible size of time of a session. It leads to necessity to use technology of reduction of time of processing and data transmission, including technology of their compact representation. In this case at the expense of an extra time on processing reduction of time of data transmission is reached. The formulation of a **scientifically-applied problem** from here follows. It is required to construct technology of a compression of the data, providing reduction of time of delivery at restrictions on power and dimensional possibilities of onboard systems. However existing methods of compression do not provide to the full the decision of the given problem. The effective approach for realisation of functions of a compression onboard are technologies using differential representation of images. For additional increase of degree of compression it is offered to consider new structural laws. One of such approaches consists in revealing perfored g dynamic ranges of files of differential representation of images. Hence, **the purpose of researches** consists in working out of a method of processing of the information on the basis of formation of the punched numbers for the differentiated images.

II. INSTRUCTION FOR AUTHORS

On the basis of the conducted researches it is possible to conclude following:

1) are revealed distinctive properties of the composite punched numbers, allowing to provide potential possibilities concerning increase of degree of compression, namely:

– the reduced dynamic range for the elements of the top punching level describing significant differences in images;

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– the quantity of the additional office information on the minimum values is defined only for lines of a file of the top punching level, and can equal in a limit to one size;

– for definition of a punching threshold the additional office information is not used;

2) the recurrent coding of the nonequilibrium punched item numbers considering that is developed:

– code-number formation is carried out simultaneously for elements bottom and elements differentiated top dynamic ranges;

– definition of a seniority of elements in the punched nonequilibrium item numbers will be organised on the basis of the punched lexicographic rule, allowing to consider variants for which value of elements of the differentiated file of the top punched level there will be more sizes of a threshold of punching;

– the code-number is formed for the punched nonequilibrium item numbers non-uniform length, it allows to build code combinations of uniform length;

– construction the punched nonequilibrium item numbers, mean selection of elements is spent in a through order on the basis of an estimation of the saved up product of the bases of elements the punched nonequilibrium item numbers that allows to provide the compromise between absence of the additional office information and minimisation of code redundancy, and allow to form code combinations of uniform length, excepting cases of their overflow.

III. CONCLUSION

The created method allows to organise code-number formation for one pass on elements of a file of differential representation and to build code words of uniform length, excepting cases of their overflow.

Novelty of results. For the first time presented in a differential kind on the basis of formation of codes-numbers compact representation of images is developed for the nonequilibrium punched item numbers. Distinctive features of the developed method from others consist that: punching is carried out on the basis of the weighed threshold with use of dynamic ranges of elements the punched nonequilibrium item numbers; code-number formation is carried out simultaneously for elements bottom and elements differentiated top the dynamic ranges presented by uniform composite punched nonequilibrium item number; the order of a seniority of elements and numbering the punched nonequilibrium item numbers is carried out on the basis of the organisation of the punching lexicographic rule providing an order of numbering of elements not concerning zero value of level, and concerning corresponding value of a dynamic range.