Development Program Help in the Study of Reed-Solomon Codes

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Abstract—**The program helping to study Read Solomon's codes including not systematic coding and decoding according to the Euclidean algorithm is developed.**

I.   INTRODUCTION

Read-Solomon's codes were offered in 1960, despite their simplicity, form a basis of new, deep generalizations [1, 2]. BCH codes, and especially Read-Solomon's codes, find broad practical application. It speaks not only that these codes possess good remote and speed regulation characteristics, but also that effective algebraic procedures are developed for their decoding [3].

II. DEVELOPMENT PROGRAM HELP IN THE STUDY OF READ-SOLOMON CODES

Read-Solomon's codes are widely used in devices of a digital sound recording, including compact disks. They possess certain optimum properties and rather simple and constructive encoding techniques are developed for them [4].

Because of great popularity of codes of Read-Solomon, the program which executes creation of an expanded Galois field, the generating polynom, not systematic coding and decoding according to the Euclidean algorithm is developed.

This program can be used for studying of codes of Read-Solomon, writing and check of examinations. Further it is planned to develop the systematic coder and the decoder on algorithm of Peterson–Gorenstein–Zierler.

III. CONCLUSION

Recently, program realization in "real time" demanded too big computational capability for Read-Solomon's codes. The main difficulty in program realization was that processors of general purpose do not support arithmetic operations for a Galois field. However in combination with the increased computational capability quite acceptable results for rather high data transmission rates allow to receive optimum drawing up programs.

REFERENCES

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[4]   V.M. Sidelnikov *Coding thorium*, FizMatLit, 2011, 324 p.