

# ANALYSIS AND PREDICTION OF THE DEVELOPMENT OF MICROPROCESSOR CHARACTERISTICS

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## I. INTRODUCTION

In the modern world of technology, the speed of development of computer technology is growing rapidly. At the same time, the question arises about the limited computer resources, in particular, to which the well-known Gordon Moore's law is reduced [1].

## II. METHODS AND RESULTS

In this work, the following characteristics of microprocessors were taken for analysis: frequency (GHz), process technology (nm), number of transistors (million), heat dissipation (W) from 1971 to 2020. According to the presented data, a dimensionless analysis was carried out. Based on the analysis, critical levels were assessed [2] based on the historical development of microprocessors. A predictive assessment of the crisis in the development of microprocessor technologies is made and possible alternatives for solving the alleged crisis are proposed (Figure 1).

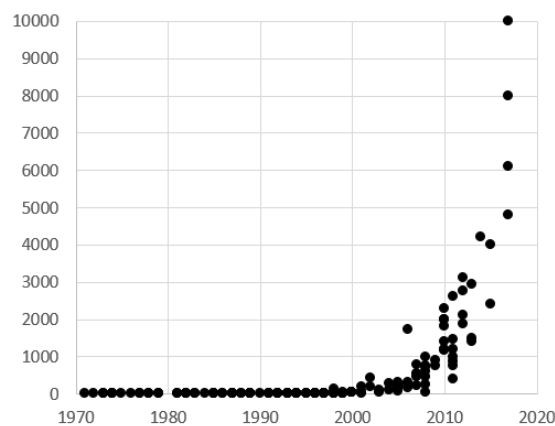


Figure 1. Number of transistors, million

## III. CONCLUSIONS

As one of the development options, we can assume an increase in the number of transistors per microprocessor, since the limit of the technological process has almost been reached. Also, along with the number of transistors, the area of the processor itself will increase.

## REFERENCES

[1] Moore's Law / A. Skorobov.- Website of the Faculty of Mathematics and Mechanics of USU, 2015.

[2] V.I. Kuzmin, A.F. Gadzaov. - Models and methods of scientific and technical forecasting: textbook / - Moscow: MIREA, 2016. - 90 p.