

ABSTRACT

The master's dissertation explores the improvement of the vending machine product dispensing system. The explanatory note consists of the following components: a list of abbreviations and acronyms, an introduction, four main chapters, startup project development, conclusions, and a bibliography. The master's dissertation comprises a total of 86 pages, 18 figures, 29 tables, and 15 references.

Objective and Task. The goal of the dissertation is to propose and implement enhancements to the automated product dispensing system of a vending machine. The dissertation tasks include:

- examination of the essence of vending machine operation. Perspectives and applications of vending machines. Classification overview;
- analysis of the prerequisites for the emergence of vending trade and vending machines;
- overview of the working principle;
- general survey of technical implementation;
- detailed examination, evaluation, and selection of an optimal concept for building the vending machine product dispensing system;
- review of key technical and hardware components of the vending machine system;
- selection of an optimal central core for the system;
- consideration of the application of hardware accelerators;
- implementation of measurement devices and executive mechanisms in the system;
- description of the structure of the server system for the vending machine;
- development of the schematic diagram of the vending machine;
- examination of the product dispensing mechanism system;
- development of the product dispensing system algorithm;
- consideration of an enhanced design for the product dispensing system;
- development of the electrical schematic diagram for the dispenser drive.

Research Object. The automated product dispensing system of a vending machine.

Research Subject. The vending machine product dispensing system.

Practical Significance of Obtained Results:

- development of a general universal schematic and algorithm block diagram for the vending machine system;

- exploration of improvements to the product dispensing system and its main aspects;

- consideration of possibilities for using measuring devices to enhance the product dispensing system.

Keywords: vending machine, product dispensing system, automated system, technical components of the product dispensing system.