Marakhovsky L.F. – Doctor of Technical Sciences, Professor, corresponding member of RAE, academician of the Interdisciplinary Academy of Sciences of Ukraine.

(marachovsky@ukr.net)

PRINCIPLE HIERARCHICAL OF SOFTWARE MANAGEMENT

INTRODUCTION.

One of the theoretical foundations for the construction of serial computing device was proposed principle software management, by Charles Babbage in the 30-ies of the XIX century. The author was able to offer a new concept of hierarchical software management principle, which could significantly open up new possibilities in the theoretical basis of Parallel computing devices, including at the expense of the element base, which functions have not changed for the past 70 years.

PRINCIPLE HIERARCHICAL OF SOFTWARE MANAGEMENT

In the nineteenth century, the famous english scientist Charles Babbage developed the program management principle, where is the information can be divided into two types: the processing and the management (Fig. 1.).
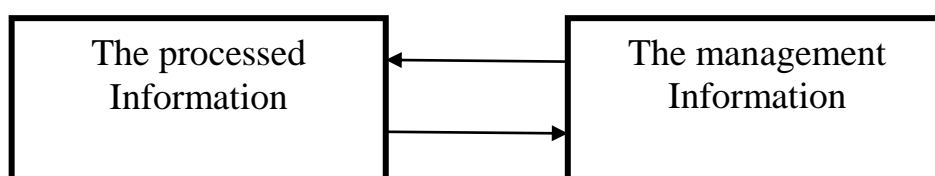

Fig. 1. The principle of program management

Program management principle has become a prerequisite for the theoretical study of numerical methods computing automation computers [1].

Note that the calculations performed on computers, software defined commands. Replacement program instructions may lead to a change in the functions of the computer.

In 1945, George. Von Neumann proposed the principle of sequential processing control information (program) as part of the computer's memory and elementary binary memory (triger) called elementary Moore automaton.

Back in the 60s of the twentieth century, it expounded the idea that the binary monofunctional memory system hinders the development of computer technology. With the advent in 1971 of the first 4004 microprocessor company "Intel", and then on the VLSI chip for a time restriction element computer database was removed. However, it is to some extent delayed the development of the fundamentals of computer technology, which belong to the elementary memory circuits.

Note that the Japanese program to create highly intelligent machines 5th generation (1981) has not yet produced the expected results, but research in this area continues intensively. Perhaps the solution should be sought not only on algorithmic, software and firmware levels of management, and in the very principles of information processing and memory element base of computers and neuro-computers and solve these problems in the complex.

Consider a generic of software management principle through the use of multi-functional capabilities of elementary automatic machines proposed by the author [2], which we call the principle of hierarchical of software management.

Hierarchical of software management principle is that the information - both the processing and control - may be divided into private and common information (fig. 2).
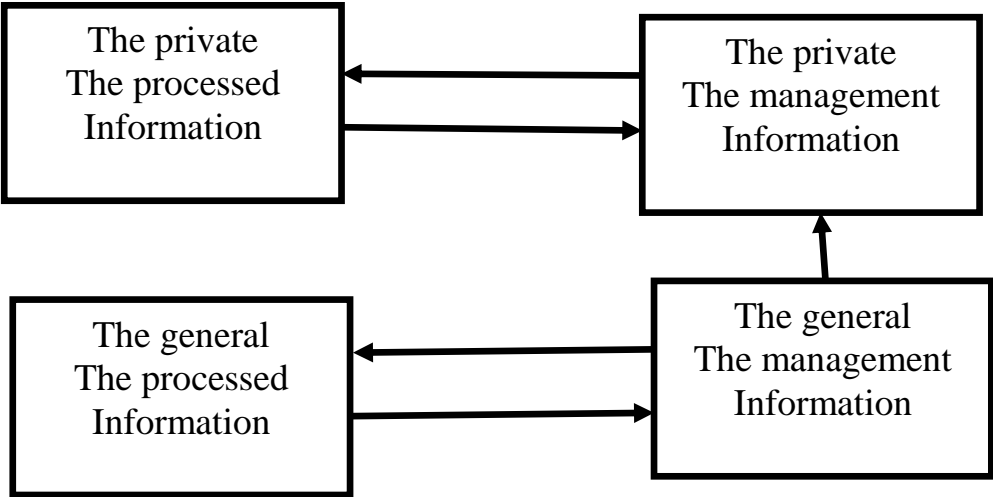

Fig. 2. **Principle hierarchical of software management**

The relationship between the private and general information provides management information - from general to private. One of the basic hierarchical temporal characteristics of the information processing is that private information is processed faster than total. One of the functional characteristics of the control information is change processing algorithm private management information simultaneously with the change in the overall processing algorithm control information.

For general information you can also imagine how the private and general. This division of information, of course, it is possible to divide up a certain minimal amount of general information.

In this regard, new functionality control information processing is hierarchical of software management principle. Private management information can be treated uniquely, probabilistic or fuzzy. The total management ("root") information may be processed or uniquely probability and to determine the treatment of private processing control information.

The main feature of the principle of the possibility of hierarchical of software management is that privately management information is divided into blocks (subsets) of the states, the functioning of which is determined by the state of the overall management information.

CONCLUSIONS

Using multi-level parallel operation of the control devices which are able to work not only in unequivocal and in probabilistic and fuzzy mode, extend the functionality of computing devices and create the preconditions for raising machine "intelligence."

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