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ECOLOGICAL-ERGONOMIC FEATURES OF A HUMAN ACTIVITY IN A VIRTUAL INFORMATION ENVIRONMENT

Now in Ukraine, favorable conditions for business development in the field of modern information technologies are created, and the revolution in the IT industry reflects the overall growth of the world technosphere. At the same time, the speed of development of information technologies directly depends on the effectiveness of an activity of the system "human - technology - environment", consequently, the problem of effective interaction of all elements of this system is currently important. In view of this, a interrelation of ecological-ergonomic characteristics of technical system with the physical and psychological capabilities of human requires detailed consideration. This will ensure effective mutual adaptation of human and informational world.

The most complete implicating in active artificial virtual environment is represented in the form of a quasi-world in the WYSIWYG graph (what you see is what you get) created in the imagination of human with the help of special software and hardware.

Herewith the virtual reality system allows to exclude human from the situation of immediate extreme activity. A plane of designing of these systems is displaced to the field of computer simulation of the effects of the real environment, transforming the latter into images that is customary to the operator.

Perceiving the represented information model, worker analyzes the situation, plans management actions and evaluates their results. The structure of information model should correspond to the algorithm of the operator's activity, as well as the interval between the moment of presentation of information to him and the moment of reaction. Also it is necessary to take into account the time interval for searching, mastering, processing information and making a decision. Time parameters of data analysis are one of the important criteria of perception and depend on the human psycho-physiological characteristics.

In such specific conditions working space (in customary sense) can be lack at all. This makes it possible to develop an already existing tendency of working in an informal setting. Therefore, worker can discharge a tasks at home (according to the principles of outsourcing) or in any other comfortable room for him. Herewith a specific approach to a spatial organization of workplace is possible. This approach allows change the notion about such ergonomic characteristics as the sizes of a working place, a design of work chair, lighting, etc., to find new substandard decisions.

The process of ergonomic design of the information environment includes the development and testing of the software product and contains the stages:
– analysis of user activity;
– building of a model of the user's workplace, formulating requirements to the activity of user , selecting of criteria for interface evaluation;
– development of a script of user's work with the program, its preliminary evaluation and correction;
– development of a user interface prototype and obtaining a working variant;
– development of user support tools (help, dictionaries, tips, etc.);
– usability-testing of the test version;
– development of the final release, preparation of documentation and procedures of user training.

The development of virtual reality technologies allows creating virtual environments with a high degree of interactivity. Namely the interactivity, reflecting the effectiveness of the interaction human with the world, is a key concept that characterizes the effectiveness and capabilities of human-machine interface.

There is a necessity for an ecological formulation of the question about the principles of human interaction with virtual reality. As in the general ecology, which explores the interaction of organisms with the natural environment and with each other, there are two possible ways of rethinking virtual-ecological problems.

Firstly, it is a complex consideration of the influence of virtual space on human, for example: the influence of junk information on human, duration of staying of human in virtual reality, etc.

Secondly, it is necessary to consider human influence on virtual reality in the aspect of both harmonious interaction and disharmonious interaction with it. Of course, the question that requires serious rethinking: what is considered as harmonious interaction of human with a virtual reality and a virtual environment. Is there a certain information capacity of the information environment by analogy with the capacity of the natural environment and where is the border of intervention that does not violate its ability to independently recover? Are there any boundaries of the information space in general: in the technological-hardware plan and the aspect of the boundaries and possibilities of human perception?

All these are aspects that need studying.