

Mine Clearing Complex Operation Algorithm Elaboration

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Annotation. The possibility of security and effectiveness increasing of work on mine clearing by means of mine clearing complex usage was considered. The algorithm of exposure and defuzing of explosive devices is developed and the variant of arrangement of robotic complex of the mine clearing is offered.

Key words: robotic complexes, functioning algorithm, explosive devices.

I. INTRODUCTION

Actuality is determined by a necessity to discover and defuze explosive devices (ED), that it is related to the large risk for life of the field engineers. Therefore taking this into account it is necessary to apply the guided *robotic* complexes (GRC) both for safe secure service and mine clearing and for prevention of assassinations or liquidation of natural and technogenic catastrophes that are extraordinarily important and perspective scientific direction.

II. GOAL OF RESEARCH

The aim of report is an analysis of research on creation of GRC, that will allow to solve the number of problematic issues and offer the methods of estimation of quick operation and degree of noninteraction of GRC.

A scientific and technical task is the development of adequate algorithms of functioning of GRC, in relation to the improvement of existent methods of exposure and defuzing of explosive devices.

III. PROBLEM SOLUTION

The methods of solution of this scientific and technical task is: consulting models, theory of unclear plurals, methods of mathematical and imitation design, probability theory etc.

IV. RESEARCH RESULTS

The result of solution of scientific and technical task is: the algorithm of functioning process of GRC is developed (on the basis of standard procedure of actions at the hand mine clearing and requirements of leading documents on the mine clearing); a flow diagram of operating system which are the basis for development of domestic mobile GRC. In the

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process of development of GRC it is necessary to follow: principle of optimum combination (to symbiosis) of robotic and man and principle of the combined operation – automatic (imitating the algorithms of human intelligence the methods of artificial intelligence) and automated (self-training of the program is at the multiple operations of man-operators of with visualization of functioning).

For the future the following is planned: development of adaptive algorithms of functioning and mathematical models of operating system, their research in model and semimodel experiments with the use of testimonies of the real sensors of the system of technical sight; realization of choice of scientific methodical vehicle for the solving of tasks of functioning of GRC

V. CONCLUSION

1. It is found out, that most optimum is creation of GRC with combined operating system, when most operations will be executed in the automatic mode with intervention from an operator in the case of acceptance of difficult decisions and adequate actions by a *robotic* complex.

2. Operating system GRC must be developed on the basis of vehicle of unclear plurals and adaptive algorithms, that will provide the necessary level of adaptation and self-training.

3. Creation of GRC grounded by the rationality of the developed model of its application as adaptive an automat for formalization of processes of their functioning in the real conditions.

4. The variant of arrangement of the special equipment is offered and grounded for a search and defuzing of VNP on a base of GRC and principle of its functioning.

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