

поглинають електромагнітну енергію як радіочастотного, так і оптичного діапазонів. Розвиток засобів технічної розвідки, як правило, випереджає розробку нових і модернізацію існуючих засобів маскування, тому тільки комплексні заходи щодо маскування ВТ і створення фіктивних об'єктів дозволяють здійснити ефективну протидію засобам технічної розвідки.

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## **DEPENDENCE OF PARAMETERS OF REPAIR OF MILITARY COMMUNICATION TOOLS ON THE QUALITY OF METROLOGICAL SUPPORT**

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Military communication tools (MCT) are continuously improving in the direction of raising the values of quality indicators, which leads to an increase in the number of elements, but the time required for maintenance and current repair (CR) remains unchanged. Some questions of the metrological reliability of the measuring instruments (MI) and recommendations for its inclusion during the maintenance and the CR of the MCT have been considered in current literature. However, there are no recommendations on the justification of the choice of MI. In this case, the approximate values of the probability of non-failure operation of the MI are used, which significantly worsens the accuracy of the results of quantitative evaluation of the time of execution of works. As a result of the combined consideration of the current achievements in the field of metrological and diagnostic support of maintenance and CR of the MCT, it is necessary to obtain the functional dependence of the indicators of maintenance on the metrological reliability of the MI. Therefore, the purpose of this work is quantitative assessment of the influence of the metrological reliability of the MI on the time of measuring the parameters of the MCM during its maintenance and CR.

It is said that, the peculiarity of the operation of the MI is due to ensurance of its reliability, mainly due to hidden metrological failures. Negative consequences of the use of MI with metrological failures can be extremely high and difficult to predict. As indicators of the metrological reliability of the MI, the probability of preserving the values of metrological characteristics in the set limits within the checking interval is used.

We propose an approach for the quantitative assessment of the effect of metrological reliability of measuring equipment on the time of the verification of the parameters of military communications means during its maintenance and current repairs. For this in the available literature, the approximate values of the probability of failure-free operation of measuring instruments are used. The latter reduces the accuracy of the obtained results. In the field conditions, it is necessary to take into account the metrological reliability of measuring instrument, which depends on temperature, humidity, vibration loads and other factors. The time for determination of the technical

state of military communications means is regulated by guidance documents, therefore it is necessary to take into account all factors influencing the values of maintainability indicators in order to plan efficient work of specialists during its technical maintenance and routine maintenance in the process of developing metrological and diagnostic support.

It is suggested to use the functional dependencies of the average recovery time of military communications equipment on the quality indicators of metrological and diagnostic support. We present examples of application the results of the study to quantify the maintainability of real samples of military communications means and show the gain in the accuracy of calculating the average recovery time. The received results allow for more objective estimation of the time of performance of works and reasonably to choose measuring instruments. Functional dependences of the influence of the metrological reliability of the MI on the mean time of restoration of the MCT are obtained and examples of their practical use are given. We are led to conclude, that account for the metrological reliability of the MI in estimation of the time of maintenance and CR of the MCT significantly increases the accuracy of the obtained results.

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## **THE USE OF GLOBAL NAVIGATION SATELLITE SYSTEMS IN THE ARMED FORCES OF UKRAINE**

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Solving various military problems is impossible without the use of space technology, namely the appropriate navigation and time support through the use of GNSS – global navigation satellite systems.

Space technology allows with high reliability to solve a number of problems of a military nature, namely:

- evaluation of precision performance of weapons; ensuring high accuracy during the testing and use of both modern and future weapons systems;
- operate weapons systems on the battlefield unprepared;
- promptly prepare the weapon system for combat use;
- interoperability of forces during a joint military action in a coalition of armed groups;
- the operational provision of accurate clevises during fire control and adjustment;
- the provision of opportunities for the application of point fire strikes, preventing collateral damage in densely populated areas, which is important during warfare in the area of the ATO;
- reduce the cost of military training units and save the resource of military equipment during training on virtual grounds and training complexes and systems;
- implementation of information technologies and information systems (reconnaissance, navigation, communication systems and data transfer) into a single set of combat equipment future soldier.