[Download](#)

<https://doi.org/10.17721/2308-135X.2019.51.51-59>

UDC 528

Kravets Taras Myroslavovych, candidate of geographical sciences, National Academy of the Army named after Hetman Sahaidachny, Lviv, Ukraine,

e-mail:

taras-kravets@ukr.net

">taras-kravets@ukr.net

Shcherba Andrii Anatoliyovych, candidate of geographical sciences, National Academy of the Army named after Hetman Sahaidachny, Lviv, Ukraine

ADVANTAGES OF USING THE ARC GIS GEOINFORMATION SYSTEM FOR DECISION BY THE UNIT COMMANDER

The purpose of the article is to present the results of modeling of geoinformation technologies in military units using the example of ArcGIS software and to substantiate the advantages of using this software in comparison with a paper map. Theoretical substantiation of practical software studies.

Method. The study was based on an analysis of available literature on the subject and the practical application of ArcGIS, comparing the benefits of using and building on their own recommendations. The available statistical materials on compliance with the standards with and without the software, based on which the conclusions are drawn, have been analyzed.

Results. The theoretical, methodical and practical problems of using ArcGIS in the military are investigated. The tendencies and prospects of development of these processes in the military sphere are analyzed. A thorough analysis of the transformation of ArcGIS use in the military has been compared and conducted. Ways of using geoinformation technologies in military units are presented, using the example of ArcGIS software. The leading tasks, which are facilitated by the software, are justified. Experimental studies of the same operations with and without geoinformation systems have been carried out.

Scientific novelty. The need for this research is due to the fact that, although ArcGIS software is hosted by many NATO countries and implemented in the Armed Forces of Ukraine, it is determined that this program should only be used in the Armed Forces of Ukraine for digital maps and direct research to determine the benefits of this product and analyze no particular application. The main focus of the study is on the features of ArcGIS. The components of ArcGIS have been identified, their analysis and prospects in the military field conducted.

Practical meaning. On the basis of modeling of introduction of geoinformation technologies in practical component of preparation and conduct of hostilities, recommendations for use to commanders of units of tactical level are developed. The time advantages of using ArcGIS in each area of work are highlighted. The directions in which the most expedient application of geoinformation technologies are determined are established. The results of the study are designed for unit commanders who can better perform their assigned combat tasks. The geographical features that should be given the most attention when using military software are highlighted.

Keywords: geoinformation systems, military geoinformation systems, digital map, electronic map.

References

1. *Andrianov V. Y.* Spatial Data Infrastructure // ArcReview. 2006 / No. 2. [Electric resource].
Доступу Access mode: [http //www.dataplus.ru/Arcrev/Number_37/1_SDI.html](http://www.dataplus.ru/Arcrev/Number_37/1_SDI.html).
2. *Saenko I.B.* New information and network technologies in military management systems. □
2010 St. Petersburg.
3. *Vagushchenko L.L.* Navigation-information systems / LL Vagushchenko. - Odessa: Phoenix, 2004. - P. 127.
4. *Vasilenko O.V.* Geoinformation control systems for the tasks of navigational support of troops / OV Vasilenko, DP Kucherov, OO Zatsaritsyn // Geoinformation systems in military tasks. Second Scientific and Technical Seminar January 21-22, 2011 : reports and articles. - Lviv: ACS, 2011. - P. 5.
5. *Petliuk I.V.* GIS technologies in military affairs / IV Petliuk, SG Vlasenko, OI Petliuk // Geoinformation systems and information technologies in military and special tasks "January GIS". Third Scientific-Practical Seminar: Papers and Abstracts. - Lviv: ACS, 2012. - P. 40.
6. *Kharchenko V.P.* Conflict Situations in the Air Traffic Management System: Study. tool. Kharchenko, GF Argunov. - K.: Publishing house of NAU "Nau-print", 2010. - P. 63.
7. *Gerasimov B.M.* Intelligent decision support systems: textbook. tool / BM Gerasimov, VM Lokasyuk. - K.: Issue of the EU, 2007. - P. 219.
8. *Permyakov A.Y.* Information technologies and modern armed struggle / O. Yu. Permyakov, AI Sbitnev. - Lugansk: Knowledge, 2008. - P. 92.

9. *Svitlichny O.O.*, Plotnitsky SV Fundamentals of Geoinformatics: Tutorial / For the General ed. OO Sumy: VTD "Univ. Kn", 2006.- 295 p.

10. Synthesis of adaptive structures of the anti-aircraft missile and artillery cover system for objects and troops and evaluation of their effectiveness Toropchin, IO Kirichenko, MO Yermoshin, etc.]. - X.: ХУПС, 2006 - 431 p.

11. The GIC definition is taken from the ArcGIS master site " <http://go.esri.com/militarytools> ".

12. Taken from military standard 01.101.007, which was approved by the order of the Head of the Standardization, Codification and Cataloging Department of August 10, 2017 No. 10

Received Editorial Board 09.10.19