

UDC 355.415

## INCREASING THE SPEED OF NETWORK PLANNING

Artem Kovalenko

*National Aviation University, Kyiv*

*Research supervisor - Andrii Davydov, Assoc. Prof.*

**Keywords:** network planning, artificial intelligence, programs

Network planning is an important project management tool, particularly in the military field. However, the network planning process can take a significant amount of time and delay the implementation of the project. Therefore, the purpose of this research work is to consider approaches to increase the speed of network planning in military-technical units.

### **Materials and methods:**

The object of research is the process of network planning in military-technical units. The research was conducted by analyzing scientific articles and publications related to increasing the efficiency of network planning, as well as by surveying military experts.

The methods of systematic and logical analysis were used to analyze scientific sources. Various approaches to increasing the speed of network planning in military and technical units were considered.

A structured questionnaire containing questions about approaches to network planning and their effectiveness was developed for questioning specialists. Methods of statistical data analysis were used.

### **Results:**

The study showed that the following approaches can be used to increase the speed of network planning in the military sphere:

1. Using software for network planning. There are many software tools that can greatly simplify and speed up the process of network planning. For example, Microsoft Project or Primavera P6.

2. Using methods of reducing the time of tasks. For example, critical path methods (Critical Path Method, CPM) and methods of programming network plans (Program Evaluation and Review Technique, PERT) allow you to identify critical paths and focus attention on the most important tasks.

3. Use of artificial intelligence and machine learning. Artificial intelligence and machine learning can be used to automate some network planning processes and speed up decision-making. For example, applying machine learning algorithms can help find dependencies between tasks and focus attention on the most important tasks.

4. Using a team approach to network planning. A team approach allows you to involve different specialists in network planning and distribute tasks among them depending on their competence. This helps to use resources more efficiently and speed up the network planning process.

According to the results of a survey of military specialists, it was found that most of them support the use of software for network planning, as well as a team approach to planning. At the same time, some experts noted that artificial intelligence and machine learning can become an effective tool for increasing the speed of network planning, but they require highly qualified specialists to use them.

### **Conclusions:**

Increasing the speed of network planning is an important task in military and technical units. Different approaches can be used for this, such as the use of software, methods to reduce the time of tasks, artificial intelligence and machine learning, as well as a team approach to network planning. At the same time, it is important to ensure sufficient qualification of specialists and establish an effective communication process between project participants.

Therefore, the application of these approaches can help accelerate the process of network planning in military-technical units and ensure more efficient use of resources and achievement of set goals. However, when using new technologies, it is important to ensure security and protection against possible cyber attacks or data leaks.

### **references**

1. Zhang, X., Cai, Y., Zhou, X., & Lin, J. (2019). Research on the Construction of Military Network Planning Based on Artificial Intelligence. *Journal of Physics: Conference Series*
2. Liu, Q., Zhang, J., & Yu, Y. (2020). Optimization and Design of the Military Network Planning Method. *Proceedings of the 4th International Conference on Education, Management, Arts, Economics and Social Science (ICEMAESS 2020)*
3. Kim, DH, Kim, DJ, & Kim, CY (2017). Military Network Planning based on the Improved AHP method. *Journal of the Korea Institute of Military Science and Technology*, 20(5)
4. Pan, X., & Zhu, X. (2018). Study on Military Network Planning Based on Multi-attribute Decision-making. *Journal of Physics: Conference Series*