

THE ROLE OF THE TECHNOLOGY OF USING AEROSPACE INFORMATION IN THE CONSTRUCTION OF AIRFIELDS AND THE SELECTION OF ITS TERRITORIES

R.Z.Shamsiyev associate professor (PhD) of the "Aeronautical Systems" department. Tashkent State Transport University, Faculty of Aviation Transport Engineering
B.A.Nomozov, master student of "Aeronautical Systems" department. Tashkent State Transport University, Faculty of Aviation Transport Engineering

Abstract. The construction of airfields is a critical aspect of the aviation industry, and the selection of suitable territories for these airfields is equally important. The advancement of technology has significantly impacted the way airfields are constructed and the process of selecting their territories. Aerospace information technology plays a crucial role in these processes, providing valuable data and insights that help in making informed decisions. In this article, we will explore the role of aerospace information technology in the construction of airfields and the selection of its territories.

Key words: airfields, aviation industry, aerospace information technology, aircraft, modeling, planning.

Introduction

The role of aerospace information technology in the construction of airfields and the selection of its territories cannot be overstated. The use of advanced tools and techniques such as GIS, remote sensing, modeling, and simulation has revolutionized the way airfields are planned, designed, and constructed. These technologies provide valuable data and insights that help in making informed decisions, optimizing the design process, and minimizing environmental impact. As technology continues to advance, it is expected that aerospace information technology will play an even greater role in the construction of airfields and the selection of its territories, further enhancing efficiency and accuracy in these critical processes.

Aerospace Information Technology in Airfield Construction

The construction of airfields involves a complex set of processes that require careful planning and execution. Aerospace information technology has revolutionized the way airfields are constructed, providing advanced tools and techniques that enhance efficiency and accuracy. One of the key aspects of aerospace information technology in airfield construction is the use of Geographic Information Systems (GIS). GIS technology allows for the collection, storage, analysis, and presentation of spatial data,

which is crucial in the planning and design of airfields. It provides valuable insights into the terrain, topography, and environmental factors that need to be considered when constructing an airfield.

Another important aspect of aerospace information technology in airfield construction is the use of remote sensing technology. Remote sensing involves the collection of data from a distance, typically using satellites or aircraft. This technology provides valuable information about the land cover, land use, and natural resources in the area where the airfield is to be constructed. This data is essential in identifying suitable locations for airfields and assessing potential environmental impacts.

In addition to GIS and remote sensing, aerospace information technology also includes advanced modeling and simulation tools that are used in the design and construction of airfields. These tools allow engineers and planners to simulate various scenarios and assess the potential impact of different design options. This helps in optimizing the design process and ensuring that the airfield meets all safety and operational requirements.

Aerospace Information Technology in Territory Selection

The selection of suitable territories for airfields is a critical decision that requires careful consideration of various factors. Aerospace information technology plays a crucial role in this process, providing valuable data and insights that help in making informed decisions. GIS technology is particularly useful in territory selection, as it allows for the analysis of spatial data related to land use, land cover, population density, and environmental factors. This information is essential in identifying suitable locations for airfields that minimize environmental impact and meet operational requirements.

Remote sensing technology also plays a significant role in territory selection, providing valuable data about the natural resources and environmental conditions in potential airfield locations. This information is crucial in assessing the feasibility of different territories and identifying any potential challenges or risks.

Furthermore, aerospace information technology includes advanced mapping and visualization tools that are used to present spatial data in a clear and comprehensive manner. These tools help decision-makers to understand the spatial relationships and patterns that exist in potential airfield territories, enabling them to make informed decisions based on accurate and up-to-date information.

Aerospace information technology has also revolutionized the way airfield construction and territory selection are managed in terms of project management and coordination. With the use of advanced project management software, stakeholders involved in the construction of airfields can collaborate more effectively, share real-time data, and streamline communication. This ensures that all parties involved are on

the same page and can work together to overcome any challenges that may arise during the construction process.

Furthermore, aerospace information technology has also played a significant role in the monitoring and maintenance of airfields once they are constructed. The use of advanced monitoring systems, such as drones and satellite imagery, allows for the regular assessment of the condition of airfields and their surrounding territories. This helps in identifying any potential issues or maintenance needs, ensuring that airfields remain safe and operational.

In addition to this, aerospace information technology has also enhanced the safety and security measures of airfields. Advanced surveillance systems and security protocols, which are made possible through aerospace information technology, help in ensuring that airfields are protected from potential threats and unauthorized access.

Conclusion

Aerospace information technology has significantly improved the efficiency, accuracy, and safety of airfield construction and territory selection. It continues to play a crucial role in shaping the future of the aviation industry, ensuring that airfields are constructed in a sustainable and responsible manner. As technology continues to advance, it is expected that the role of aerospace information technology in airfield construction and territory selection will continue to evolve, further enhancing the processes involved in these critical aspects of the aviation industry.

The list of used literature

1. Fundamentals of Aerodynamics by John D. Anderson Jr.
2. Aviation Weather Services Handbook by Federal Aviation Administration (FAA)
3. Introduction to Aircraft Structural Analysis by T.H.G. Megson
4. Cockpit Confidential: Everything You Need to Know About Air Travel: Questions, Answers, and Reflections by Patrick Smith
5. Airline Operations and Management: A Management Textbook by Gerald N. Cook and Bruce Billig