

study of observation conditions. The correct selection of the positions of the border observation points allows to use a minimum number of observation devices. This can be considered favorable from the economic point of view. The use of Geographic Information Systems (GIS) allows effective exchange of digital spatial data collected and analyzed at border points with headquarters, neighboring and higher units.

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ANALYSIS OF THE EFFECTIVENESS OF RAISING THE ANTENNA TO A HIGH ALTITUDE

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The range of ultrahigh frequencies communications strongly depends on the height of the antenna. The antenna can be raised to great heights using, for example, an air balloon. But this causes signal loss in the feeder [1-4]. Consequently, there is a problem of choosing the optimal antenna height at which the signal at the receiver input will be maximum. Choosing the optimal antenna height is a pressing problem in the field of ultrahigh frequencies communication systems. Communication efficiency directly depends on this parameter, and optimizing it will significantly improve system performance [3, 5]. Solving this problem has the potential to improve a wide range of telecommunication technologies, such as ultrahigh frequencies communication systems, unmanned aircraft and remote sensing of the Earth [2, 6]. The study aims to conduct a comprehensive analysis to determine the optimal height for raising an ultrahigh frequencies radio communication antenna. The research methodology includes determining target communication parameters, creating mathematical models of the system, analyzing the effect of antenna height on communication performance,

optimizing parameters and verifying results through simulation. This will allow us to study the influence of various factors on the efficiency of antenna elevation and optimize its height to achieve maximum communication performance. Sampling parameters include types of antennas and drop feeders, and communication frequency. These parameters will ensure the representativeness of the research results and will allow the methodology to be adapted to the specific conditions of use of ultrahigh frequencies communication systems.

The main results of the study will include determining the optimal antenna height to maximize communication efficiency while minimizing signal loss in the feeder. The study should also identify the impact of antenna and feeder types on communication quality. It is likely that these results will provide important practical recommendations for optimizing the antenna height selection and improving the performance of ultrahigh frequencies communication systems. The findings of the study will indicate the optimal antenna height to maximize communication efficiency while minimizing signal loss in the feeder. The recommendations will also address the importance of considering the characteristics of antennas and reduction feeders to optimize the performance of ultrahigh frequencies communications systems. Optimal placement of the antenna at the correct height allows you to achieve maximum communication and data transmission efficiency with minimal signal loss. Antenna and feeder selection recommendations can significantly improve the performance of communications systems in a variety of applications.

The study provides the opportunity to optimize the height of antenna placement to improve the quality of ultrahigh frequencies communications. This will improve the performance and reliability of communications in various fields such as telecommunications, unmanned aircraft and remote sensing.

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