ANALYSIS OF THE POSSIBILITY OF SURVEYING THE FOREST FUND USING UAVS

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Nowadays, the surveyor has at its disposal a wide range of instrument park, which allows you to achieve the engineering goals set in the survey support of mining facilities. Unmanned technologies are gaining an increasing sphere of surveying measurements, which lead to minimal participation of a specialist in field work, but require a more classified approach to off-site processing. However, it is worth noting that each mining enterprise, for example, such as a quarry, having an exclusive boundary of work, called a license area, in its contour may have a forest area, which is an object that causes certain difficulties for surveying support. This article tells about the possibility of using a short-range unmanned UAVs for surveying the forest area, as well as analyzing the result obtained and determining its compliance with engineering requirements when obtaining an up-to-date topographic plan of the area. To determine the possibility of using unmanned technology in mine surveying of a forest, theoretical and experimental research methods will be used, including a significant set of empiricals, the mathematical processing of which will help to reveal the correlation dependences of aerial photogrammetric survey parameters for the optimal use of a geodetic quadcopter. The result of the study given in this article will be a provision on the possibility of using unmanned technologies for aerial photogrammetric survey of a forest land, correlation dependences of flight parameters and their results will be determined, the derivatives of which will be topographic plans, the comparison of which will be carried out with plans, created by the classical method.

Keywords: unmanned aerial vehicle, nadir view, woodland, aerial photogrammetric survey error, off-site processing, surface model, topographic plan

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