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Asphalt layers surface erosion as a challenge in preparing 3D point cloud using drones.

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Abstract

The reflected surfaces have always been a big challenge in the drone surveying industry, as we are going to discuss a case of study for an asphalt surface by measuring old one that has erosion due to traffic, which cause difference in elevation that cannot be used as precise data for construction projects, and new asphalt layer that has no erosion which can produce a centimeter level accurate model.

The 3d point cloud models that produced from drone capturing can be used to create surfaces for NGL and to create precise planes of existing facilities, which minimize time, effort, and eliminate human error, produce an easy way to monitor quantities and progress in infrastructure projects.

In this case we will discuss the time of image capturing effect during the day and the white balance in the camera and its parameters, the weak and strong points of existing filters of point cloud in commonly known programs, and a theory of how we can eliminate the effect of the reflected surfaces without the need of point cloud filtering to remove the error in the models, as well as the challenges that face the drone surveying industry in Palestine and worldwide also.