

## MODERN PHOTOGRAMMETRIC TECHNOLOGIES UTILIZED IN BITUMINOUS LAYER MONITORING

### Goal of the project

The project presents solutions, sustained by case studies, regarding the geospatial data acquisition, processing and interpretation using modern photogrammetric technologies in bituminous layer monitoring.

### Short description of the project

The project' two main objectives are: regular monitoring of the bituminous garment degradation status evolution and thermal regime evaluation in a bituminous garment at certain time intervals.

The project proposes the degradation status evolution monitoring and the thermic regime evaluation for a bituminous layer, during its execution, using images acquired with a UAV.

### Implementation period

01.02.2019 - 31.07.2020

### Budget

49.200 RON

### Main activities

For the degradation status evolution assessment there are provided two flights at intervals of six months between them, in order to determine the type and extent of the defects from the surface of a bituminous layer, as well as the clogging state of the clogging devices.

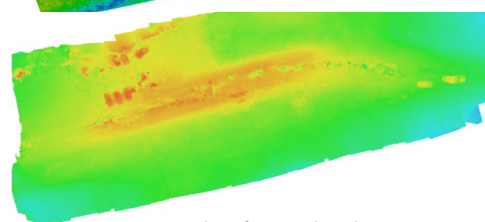
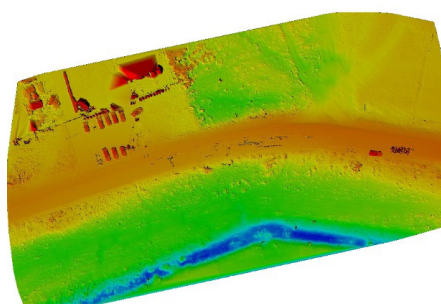
The flights, aimed at determining the thermal regime, are performed on the same day on a sector on which a bituminous layer is realized.

Three values will be obtained: at the time of mixing, at the beginning of the compaction and at the end of the works. Also, based on the obtained depth results, a temperature profile on the executed layer thickness will be drafted.

### Results

The geospatial and thermal data collected on the experimental sectors were analyzed, processed and georeferenced, obtaining specific photogrammetric products (i.e. DSM - Digital Surface Model), and information regarding the bituminous layer temperature when it is put into operation (squeezing, compacting, commissioning).

DSM - Digital Surface Mode - Visual Vision



DSM - Digital Surface Mode - Thermic Vision

### Applicability and transferability of the results:

Following the correlation of both the results obtained by classical methods (the temperatures determination by direct measurements made on the field and the degradation state evaluation using measurements made on the field) and the results obtained after processing, the method used in this project is more accurate and economical, representing a progress in the field of communication ways.

### Research team

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