

Project "ELEVAR" – Development of an UAV for Autonomous Photo Surveys of Surfaces

Maria Henriques, Tiago Pinto, João Andrade, Duarte Dornellas and Jorge Gonçalves (Portugal)

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SUMMARY

The “Project ELEVAR– Study of Vertical Structures with Robotized Aircrafts” financed by the COMPETE program, has as its main objective the development of an aircraft for the autonomous photogrammetric surveys of vertical surfaces, namely of dam walls, bridge, pillars, and facades of buildings and monuments. The photographs obtained will support the visual inspections carried out in the scope of monitoring and safety control of civil engineering works. The aircraft will navigate through stereoscopic cameras, sensors and dedicated algorithms that allow the autonomous positioning and three-dimensional reconstruction of the structures without the aid of GNSS systems in areas of poor signal coverage or where high precision is required. The photographic surveys will be carried out with a distinct, high-definition camera, aided by a system that allows to acquire images at the desired moment. The system is being developed by a consortium led by the company TEKEVER ASDS, integrating the Institute of Systems and Robotics of Instituto Superior Técnico and the National Laboratory for Civil Engineering. This paper presents the project and the results achieved by the project.

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