

## Azur Drones expands its business to deal with major natural disasters

*Thanks to the technology transferred by BRGM the SME has been enabled to offer new high-added-value services.*

### Supporting Innovation

**Remote aerial drone photography** is now widespread practice. However, its relevance to landslide/rockslide disaster assessment remained to be seen. Up until now, cliff edge profile monitoring was performed using laser measurement from a fixed reference mark. The deviations between the two sets of measured data are being aggregated to produce disaster estimates. This approach, although reliable, is a rather costly, access-restricted and time-consuming task. By way of photogrammetry, the drone is able to capture images from different angles (diagonal, horizontal and vertical). An algorithm superimposes acquired images to build up the cliff contour resulting in a 2 cm-level mapping accuracy. The drone concept enables the necessary calculations in an expedient manner. It is as efficient also proving to be much more economical than laser measuring, while allowing for increased control promoting better protection.



### The client needs

As a result of the knowledge acquired by **Azur Drones** since 2012, the company has developed competence that is recognised by major clients in the construction and civil engineering as well as private security industries. The company associates the drone's system reliability and economic benefits with data acquisition systems featured to suit any requirements. The SME compared drone measurements alongside laser measurements of changes on the same cliff edge position. Through the BRGM Carnot Institute's computational tools the superposition of successive views per second of flight time has resulted in a densely accurate 3D point cloud generation fully consistent with the laser measurements. With such implementation of technology transfer by BRGM, Azur Drones is now in a position to provide detailed natural disaster assessments, which has created an opportunity to hire a specialist.

### Partnership

The **BRGM Carnot Institute** is the one-stop scientific executive Agency for resources and above-ground/below-ground disaster management services. The establishment of the Institute has led to the development of relief calibration and modelling tools from acquired data flows. Recognising the potential of combining photogrammetric modelling with drone flexible platforms, a reference partner was much needed to integrate such new know-how into its commercial offering and widen its scope for applications. The Azur Drones-BRGM Carnot partnership, also known as the 'SUAVE Project', takes on concrete form by providing the full potential of an established economically viable scientific practice for numerous peratorss via the Azur Drones SME.