



Topographical methodology in the fluvial bars' scanning works.

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The use of topographic instruments for massive data capture, like laser scanner, automatic photogrammetry or drones, is very frequent in the geometric documentation of different realities like heritage, industry or geomorphology. However, the apparent simplicity in the handling of such devices and the high speed of the measurement hides the true workflow that must be carry out in order to compare the 3D models finally obtained.

The project that we are carrying out consists on the registration by terrestrial laser scanner of several bars in a very dynamic river reach of the Leizaran River, in a geomorphological adjustment process responding to a dam removal. These bars have a considerable length, since some of them measure at least 500 meters, and are distributed along 4 km of the river bed. The sinuous course of the river, along with the spatial separation of the bars, the need to repeat the data collection annually, and the extraordinary changes that the area presents from year to year increases the degree of difficulty of the project. It is necessary to guarantee that the geometric 3D models obtained in each one of the campaigns are in the same reference system in both planimetry and altimetry since otherwise it would not be possible the comparisons. This means that along with the scans it is necessary to carry out topographic works that ensures both the accuracy of the scans themselves, as well as the reference network on which they rely, a basic issue in the development of the project.

Based on the experience accumulated during the last four years we present the particularities that must be taken into account when the laser scanner is used in such a broad and specific temporal and geographical space as a river environment.