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LIDAR MAPPING TECHNOLOGY TO POPULATE GREEN AREAS GIS

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Abstract. In the last eight years the structure of Topographical Database of green areas has been implemented and consolidated: originally born to manage green areas in Milan, it is now used in other cities. Beside the optimizations achieved in data management (i.e. relationship between data and working process, updating procedures, exhaustive Index of Items) it is now becoming important an optimization in data acquisition: this is the reason why a test was started involving the use of LiDAR technology for surveying those green areas classified as equipped parks (over 50.000 sqmt), as an alternative to the traditional topographycal survey. LiDAR technology is commonly applied to forestry surveying and green mass computation, even in urban contexts, achieving good results also in automation of data processing. Nevertheless this testing activity has a specific aim, that is to derive (also using the contextual orthophoto) as many layers as possible among the ones described by the Specifications on Green areas TDb, preserving the high level of thematical detail and accuracy suggested by the Specifications. To do this, using the application Laserweb© for visualization and interaction with the point cloud, new and specific functions and layouts have been designed and implemented. For each item of the index has been made an effort to encode the optimal strategy for exploring the cloud and exporting the datum. The variety of the elements included in the Specification Index of Items is very differentiated, therefore also the procedures in point cloud analysis are various, as the main purpose of this work is to exploit all the potential information contained in a point cloud.

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