

A Study on the efficient as-built drawing creation using terrestrial LiDAR

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ABSTRACT: In order to produce the as-built drawings of existing structures, accurate field measurements are required. However, in many cases, just simple modification of the design drawing was made rather than creating the as-built drawing due to difficulties of data acquisitions and process to create the drawings. This study proposed an efficient and reliable methodology to produce the 2D as-built drawing of existing tunnel using the terrestrial LiDAR and image processing techniques. The 3D pointcloud data acquired from the terrestrial LiDAR is projected onto a horizon plane, converted to a 2D planar binary image. After which, median filter is used to remove the noise, and outlines of structure is traced by using the edge detection technique. Finally, the traced outlines are exported and compared with the design drawings, thus changes in the existing buildings can be found.