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GEOREFERENCING OF TLS DATA FOR INDUSTRIAL INDOOR COMPLEX SCENES: BEYOND CURRENT SOLUTIONS

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Abstract. Current Terrestrial Laser Scanners (TLS) allow fast acquisitions of many dense point clouds. This technology is widely used within industrial complex scenes. The precise georeferencing of all the per-station point clouds is a crucial stage. Nowadays, the use of targets or tacheometry for precise georeferencing is time-consuming and then limits the number of surveys. The purpose of this article is to present and analyse a primitive based registration using points, lines and planes automatically extracted and paired in the station point clouds. Our tests highlight the advantages and the current limitations of this approach. We also discuss the recent, and probably future, improvements of indoor geolocation systems as possible ways of research for the georeferencing of TLS data into industrial complex scenes.

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