

# Trimble LaserAce 1000 Accuracy Evaluation for Indoor Data Acquisition

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## SUMMARY

Surveying can be done using several sciences and techniques for outdoor and indoor data acquisition like photogrammetry, land surveying, remote sensing, Global Positioning System (GPS) and laser scanning. Electronic Distance Measurement (EDM) is a reliable and frequently used technique. Laser scanning is costly and time consuming compared to the other mentioned techniques. Currently GPS is one of the most used techniques to measure coordinates, distance and angles between points in outdoor environments, but it has some drawbacks in indoor environment (e.g signal penetration). Currently, for indoor surveying, EDM and Terrestrial Laser Scanner (TLS) are mostly used. In this paper, several techniques for indoor 3D building data acquisition have been investigated. A new technique of indoor building data acquisition is proposed. This technique is efficient and rapid (it requires shorter time as compared to others), however the results show inconsistencies in horizontal angles for short distances below 20 meters in indoor environments. Results were calibrated by a least square adjustment algorithm. Future research attempts to investigate object reconstruction algorithms to optimize measurements.