



#### Volume XL-5

Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XL-5, 581-587, 2014  
www.int-arch-photogramm-remote-sens-spatial-inf-sci.net/XL-5/581/2014/  
doi: 10.5194/isprsarchives-XL-5-581-2014  
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## Indoor Modelling Benchmark for 3D Geometry Extraction

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**Keywords:** Indoor, 3D Modelling, Benchmark, Terrestrial Laser Scanning, Segmentation, Reconstruction

**Abstract.** A combination of faster, cheaper and more accurate hardware, more sophisticated software, and greater industry acceptance have all laid the foundations for an increased desire for accurate 3D parametric models of buildings. Pointclouds are the data source of choice currently with static terrestrial laser scanning the predominant tool for large, dense volume measurement. The current importance of pointclouds as the primary source of real world representation is endorsed by CAD software vendor acquisitions of pointcloud engines in 2011. Both the capture and modelling of indoor environments require great effort in time by the operator (and therefore cost). Automation is seen as a way to aid this by reducing the workload of the user and some commercial packages have appeared that provide automation to some degree. In the data capture phase, advances in indoor mobile mapping systems are speeding up the process, albeit currently with a reduction in accuracy. As a result this paper presents freely accessible pointcloud datasets of two typical areas of a building each captured with two different capture methods and each with an accurate wholly manually created model. These datasets are provided as a benchmark for the research community to gauge the performance and improvements of various techniques for indoor geometry extraction. With this in mind, non-proprietary, interoperable formats are provided such as E57 for the scans and IFC for the reference model. The datasets can be found at:

<http://indoor-bench.github.io/indoor-bench>.

[Conference Paper](#) (PDF, 1004 KB)

Citation: Thomson, C. and Boehm, J.: Indoor Modelling Benchmark for 3D Geometry Extraction, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XL-5, 581-587, doi:10.5194/isprsarchives-XL-5-581-2014, 2014.

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