

ABSTRACT OF THE DISCLOSURE

Aspects of the disclosure include methods, apparatuses, and non-transitory computer-readable storage mediums for generating a floor plan from a point cloud model. An apparatus includes processing circuitry that receives an input three-dimensional point cloud corresponding to a three-dimensional space. The processing circuitry determines a plurality of wall planes in the received input three-dimensional point cloud. The processing circuitry generates a plurality of line segments. Each line segment is generated by projecting a respective wall plane of the plurality of wall planes to a floor plane in the three-dimensional space. The processing circuitry represents the plurality of wall planes in the three-dimensional space using the plurality of line segments in a two-dimensional space corresponding to the floor plan. The processing circuitry adjusts the plurality of line segments in the two-dimensional space to improve the floor plan. The processing circuitry generates the floor plan based on the plurality of adjusted line segments.

Fig. 1