

ABSTRACT OF THE DISCLOSURE

Aspects of the disclosure include methods, apparatuses, and non-transitory computer-readable storage mediums for generating a three-dimensional (3D) geometry of a room from a panorama image of the room. An apparatus includes processing circuitry that determine two-dimensional (2D) positions of wall corner points of the room in the panorama image based on a user input. Each wall corner point is in one of a floor plane or a ceiling plane of the room. The processing circuitry calculates 3D positions of the wall corner points based on the 2D positions of the wall corner points, a size of the panorama image, and a distance between the floor plane and a capture position of a device capturing the panorama image, determines a room layout based on an order of the wall corner points, and generates the 3D geometry based on the room layout and the 3D positions of the wall corner points.

Figure 1A