ABSTRACT

In this Final Project, the application of the Random Sample Consensus (RANSAC) method for room mapping using Light Detection and Ranging (LiDAR) technology has been investigated. The process of collecting data using LiDAR placed on the ground or known as ground-based LiDAR. The application of the RANSAC method in this Final Project aims to do a line-fitting on a room map as one of the solutions to overcome the problem of LiDAR point cloud data that are missing or incomplete during the scanning process so as to save data retrieving time.

For data collection, LiDAR is in a static position and placed in the middle of a closed room with a size of 5.76 x 4.95 m2 using YDLIDAR G4 with an optimal working frequency of 7 Hz. The condition of the room where the data is taken is not empty and because there are several objects that can affect the original shape of the room.

The results of data processing in the form of a map of the room visualized in 2 dimensions (2D) on MATLAB. The application of the RANSAC method on the ground-based LiDAR still requires further study so that it becomes one of the reasons in the selection of the method.

Keywords : LiDAR, RANSAC, *line-fitting*, *point cloud*