ABSTRACT

The case of corona virus disease (Covid-19) has been growing rapidly around the world and caused high mortality rate since early 2020. Government attempts to push down virus spreads. Disinfectant is effective killed virus that stick on objects. That is why AUMR (Automatic UVC Mobile Robot) was created to help spray disinfectant in hospital rooms.

Mapping systems with LiDAR sensors are applied to improve the performance of the AUMR. The LiDAR sensor as an environmental scanner that will be a sensor for the formation of 2D mapping. Mapping is forming map method resulting from readings that have been converted into a grid map so as to form a sampling size.

It was also done by a high-distance display using the Xrdp. Monitoring would be focused on the accuracy of the LiDAR sensors forming a map and robot localization using the Ubuntu ROS Melodic as its operating system. From the results of the test, the LiDAR sensors can read the distance at any Angle of 0°, 45°, 90°, 135°, 180°, 225°, 270 °, 315°, 360° as well as an error of 1.15%. Whereas at the time of testing for map accuracy, the LiDAR sensor had an error of 1.69%. For testing localization by incorporating the transfer of robots, the LiDAR sensors can detect localized accuracy with errors of no more than 1.5%. This proves that the LiDAR sensors are excellent and consistent with actual data and can be applied to mapping location because they are more than 95% accurate.

Keyword**:** *AUMR, Covid-19, LiDAR Sensor, Location Mapping, Xrdp*