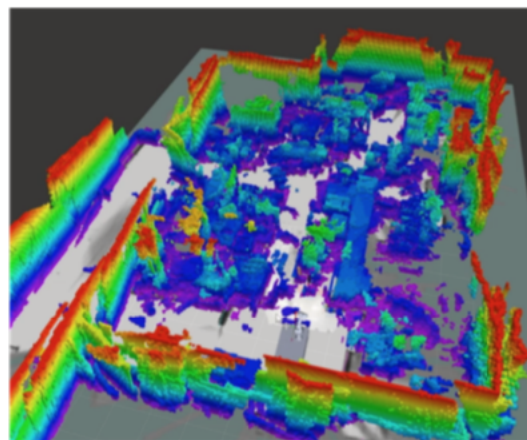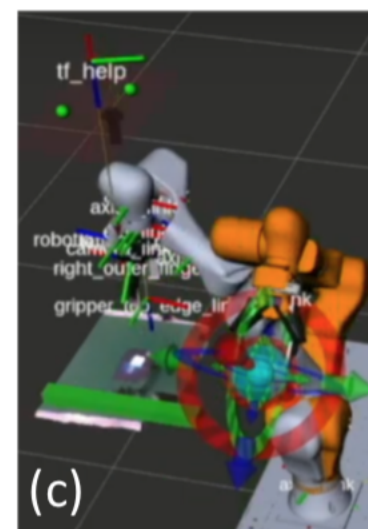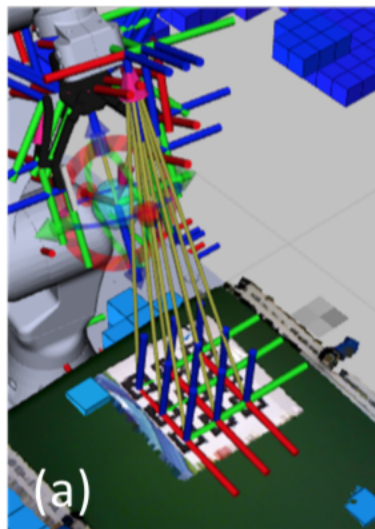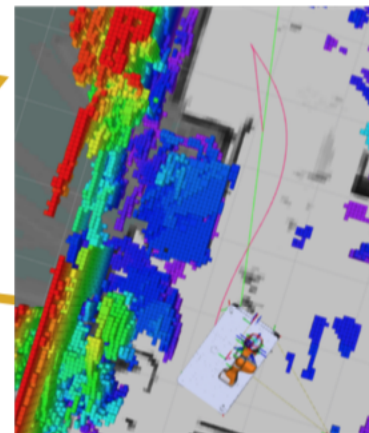(a)

(b)

(c)

Autonomous Mobile Industrial Robot (AMIR)

2D and 3D map and pose computed by SLAM

Navigation and manipulation with obstacle avoidance

RGB-D Camera

Arm Encoders

2D Laser Scanner

IMU

Wheel Encoders