

Appendix A — Glossary

Ackermann Steering

A steering model used by cars and the Rosmaster R2. Front wheels turn while back wheels stay straight.

AMCL

Adaptive Monte Carlo Localization. Helps robot know where it is on the map.

Autopilot

Robot drives itself using AI or navigation planners.

Cartographer

SLAM system that builds maps with LiDAR.

Costmap

A grid showing obstacles and safe zones.

Controller

Hand-held joystick used to control the robot.

LiDAR

Laser sensor that measures distance to objects.

Loop Closure

Matching new scans with old ones to fix map drift.

Map Server

Loads and saves maps.

RViz

ROS visualization tool.

SLAM

Simultaneous Localization and Mapping.

TEB

Timed Elastic Band planner for smooth paths.

Waypoint

A point on the map the robot moves toward.