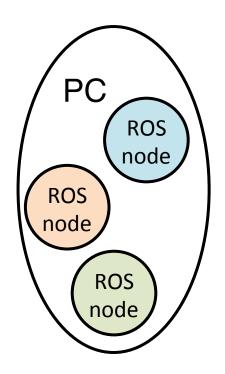
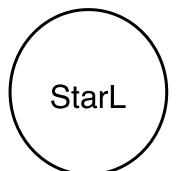
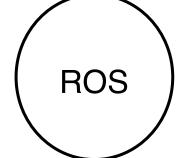
## **External**





## **Car Software**





## **Car Hardware**

Motors

**LIDAR** 

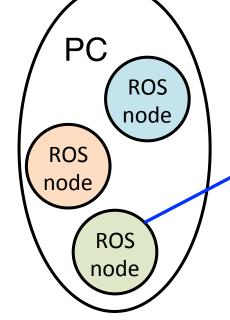
Camera

**IMU** 

### Manual Control via Keyboard

## **External**

# VICON



## **Car Software**

StarL

ROS

- Read keyboard input and output drive command
- Subscribe to drive commands and push PWM settings to motors

## **Car Hardware**

Motors

**LIDAR** 

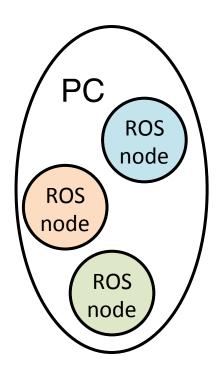
Camera

IMU

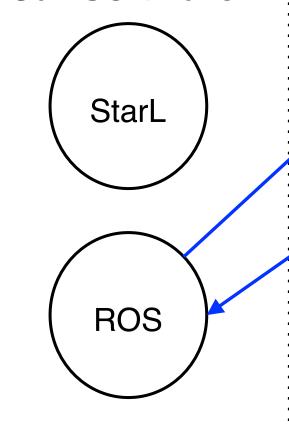
#### **Waypoint Tracking – Spring 2017**

## **External**





## **Car Software**



 Get LIDAR data, apply hector SLAM to localize, use proportional controller to generate drive commands to follow static waypoints.

## **Car Hardware**

**Motors** 

**LIDAR** 

Camera

**IMU** 

 Subscribe to drive commands and push PWM settings to motors

#### **Waypoint Tracking – VICON**

## **Car Software External VICON** StarL ros-vicon bridge PC ROS **ROS** node ROS Get VICON data and node publish to waypoint tracking process ROS node Get position & publish drive commands from proportional controller

## **Car Hardware**

**Motors** 

**LIDAR** 

Camera

**IMU** 

Subscribe to drive commands and push PWM settings to motors

#### **End of Summer Demo Car Software Car Hardware External Motors VICON** StarL ros-java ros-vicon **LIDAR** bridge bridge PC ROS Camera **ROS** node ROS **IMU** Get VICON data and node publish to bridge with StarL ROS Get position & waypoint from StarL and publish drive node Get LIDAR/camera commands data, compute obstacles, publish to Update motors StarL

