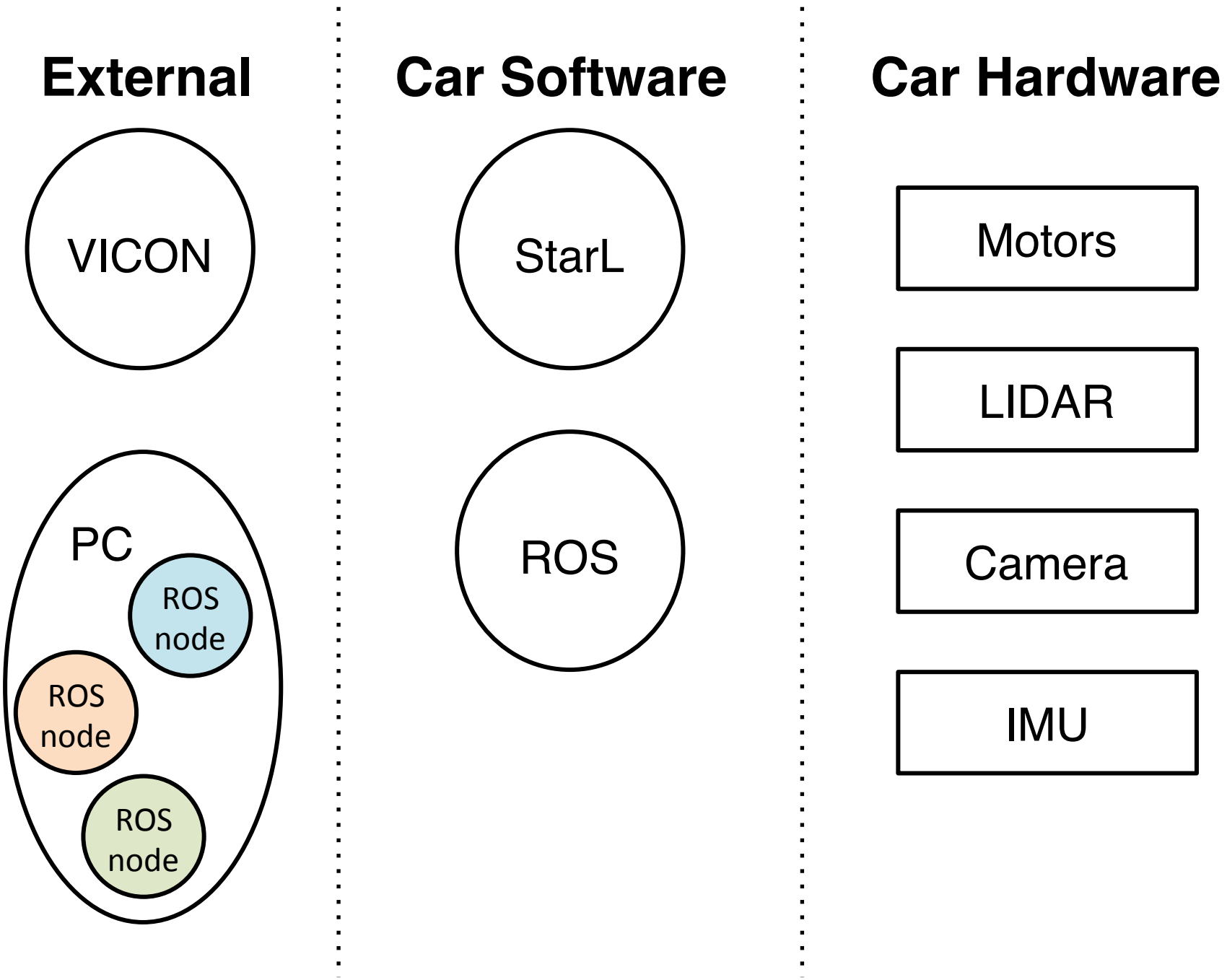
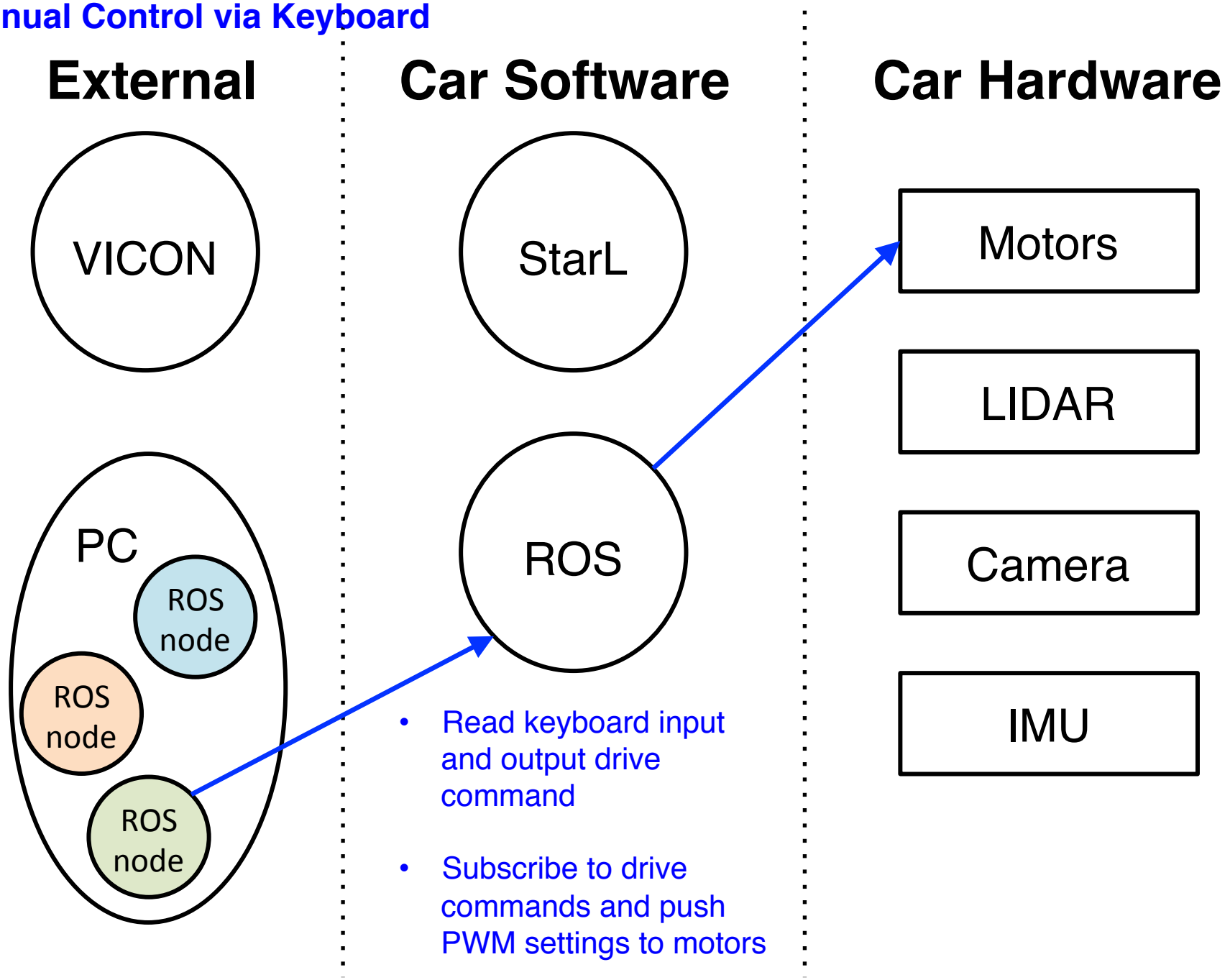

External
Car Software
Car Hardware
VICON
PC
ROS node
ROS node
ROS node
StarL
ROS
Motors
LIDAR
Camera
IMU

Manual Control via Keyboard



Waypoint Tracking – Spring 2017

External

VICON

PC

ROS node

ROS node

ROS node

Car Software

StarL

ROS

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

Car Hardware

Motors

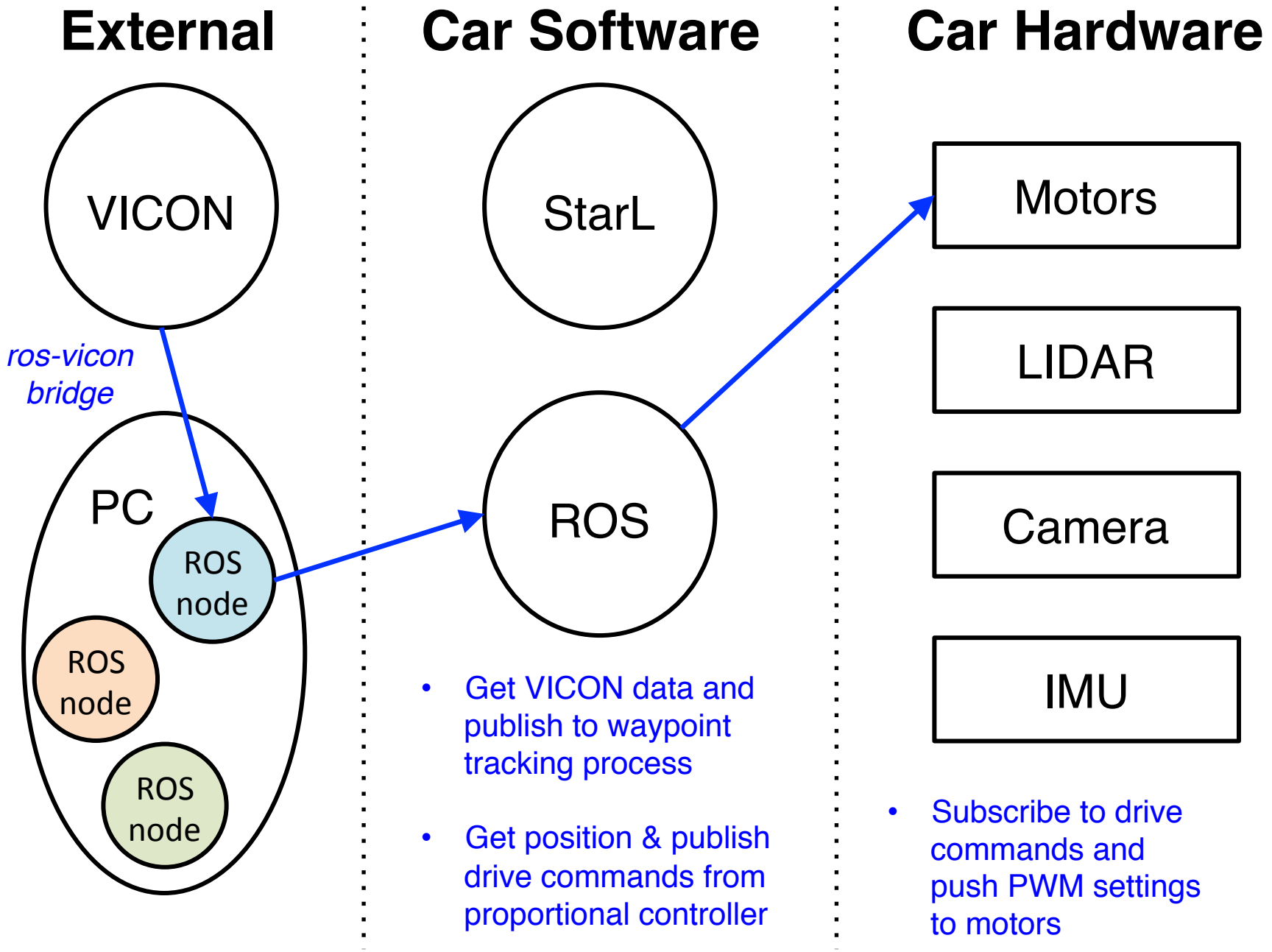
LIDAR

Camera

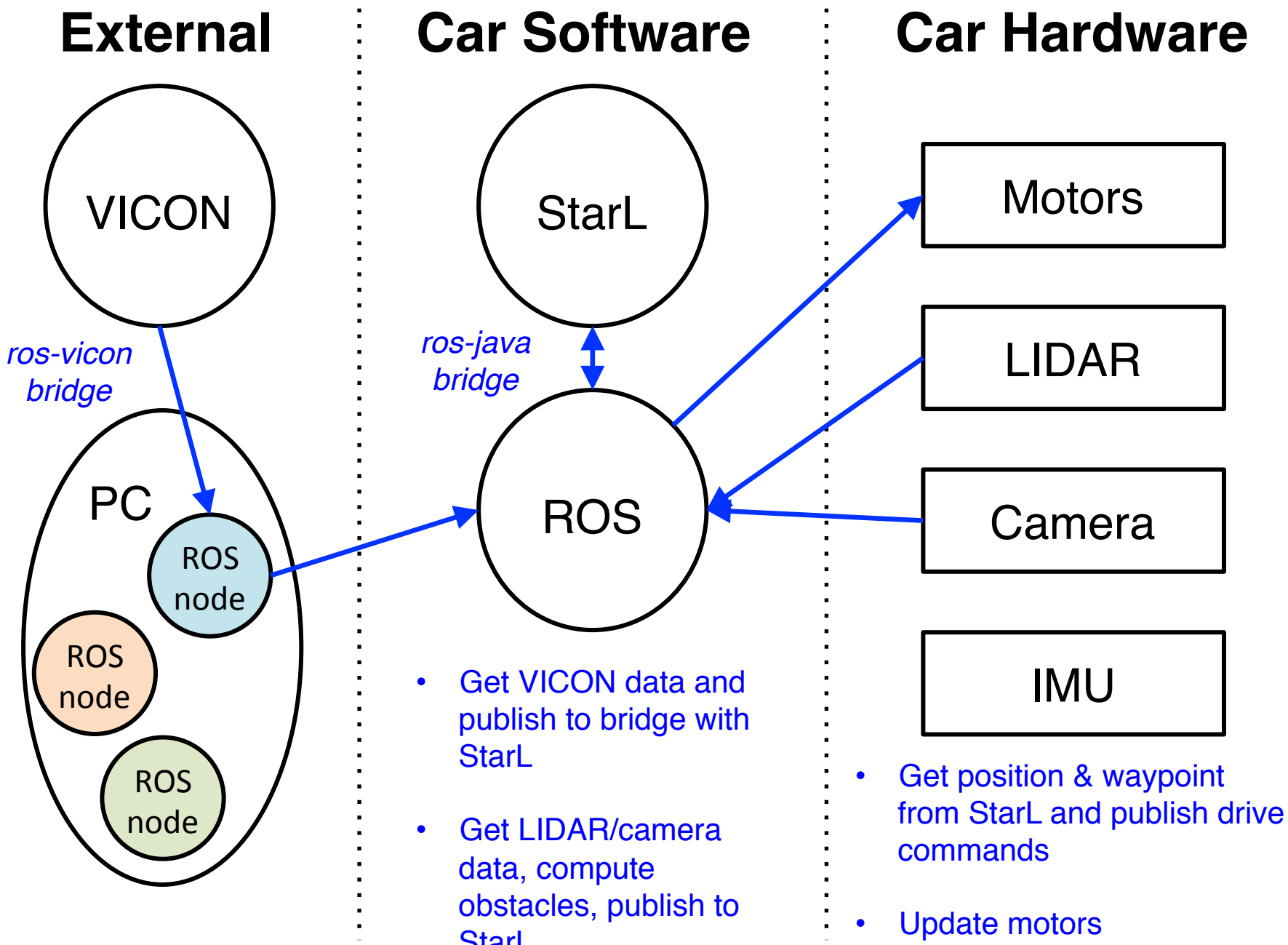
IMU

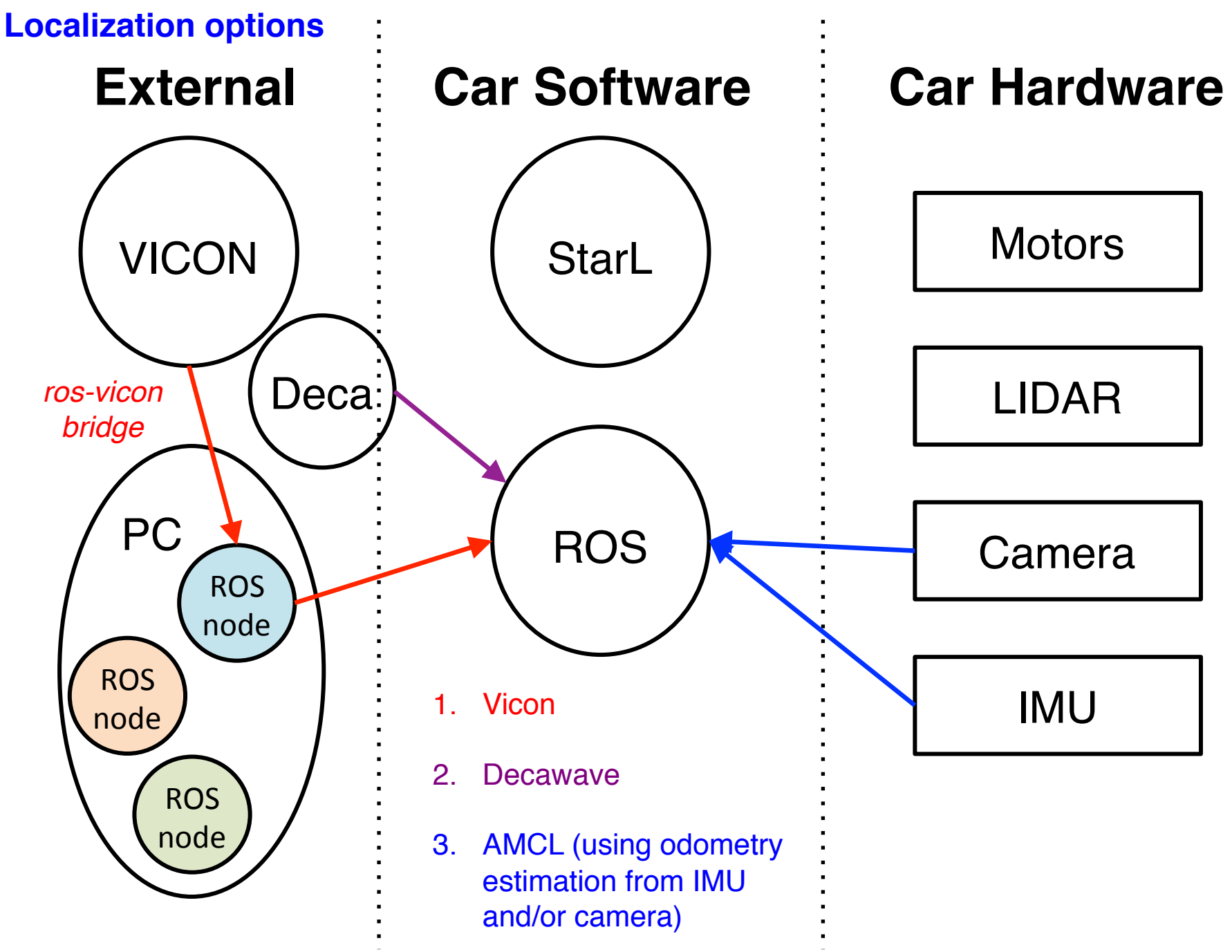
- Subscribe to drive commands and push PWM settings to motors

Waypoint Tracking – VICON



End of Summer Demo




Localization options
External
Car Software
Car Hardware
VICON
Deca
StarL
Motors
LIDAR
Camera
IMU
ros-vicon bridge
PC
ROS node
ROS node
ROS node
ROS
1. Vicon
2. Decawave
3. AMCL (using odometry estimation from IMU and/or camera)