Week 8: Autoware <-> CAN DBW (Dataspeed) Vehicle Interface Overview

Resources:
- Vehicle Interface Overview
- Creating the Vehicle Interface
- Ackermann Kinematic Model
- Customizing for Differential Drive Model

In order for Autoware and the vehicle to communicate bidirectionally for autonomous driving, we will need to create a "vehicle interface" package that converts Dataspeed ROS messages to Autoware ROS messages and vice-versa.

Autoware publishes **control** commands such as velocity control, steering control, turn signal commands, gear control, etc.

The interface then must convert these messages into actuation readable by the Dataspeed in order to activate the brakes, steering input, lights and so on. The pipeline of the vehicle interface can be seen in the figure below:
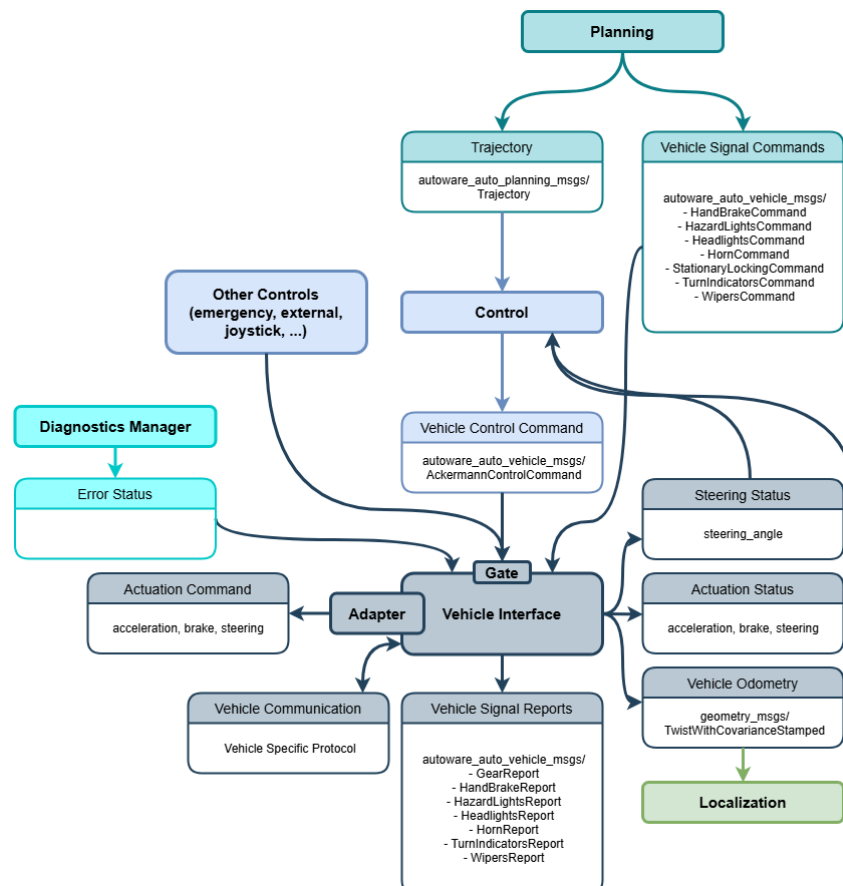

Figure 1: Autoware vehicle interface pipeline

The figure above was taken from Autoware's official documentation. However, the message names are deprecated as of 11/22/2025. The correct message names can be found by exploring individual messages and checking that the submessages correlate to those in the figure above.