## **Autoware Planning Simulator**

## Approximate Time Investment: 1 hour

We have installed Autoware but we are far from operating our Autonomous Lincoln MKZ research vehicle, however we can experiment with the planning simulator using a sample vehicle, sample sensor kit, and sample map provided by Autoware as a preview and to familiarize ourselves with what is to come.

Resource: Autoware Planning Simulation Guide

- 1. Download the sample map from Autoware's planning simulation guide page, linked above. You can simply download it manually and place it in a folder called autoware\_map somewhere you can easily reference.
- 2. Check that in our autoware\_data folder inside our Autoware workspace that we have the 'artifacts' library packages in the Figure 1. These packages should exist if the Autoware installation procedure was followed correctly. If they do not exist, backtrack to the installation document and follow the steps where we run the Ansible script and respond "y" to the prompt asking if we want the artifacts library.

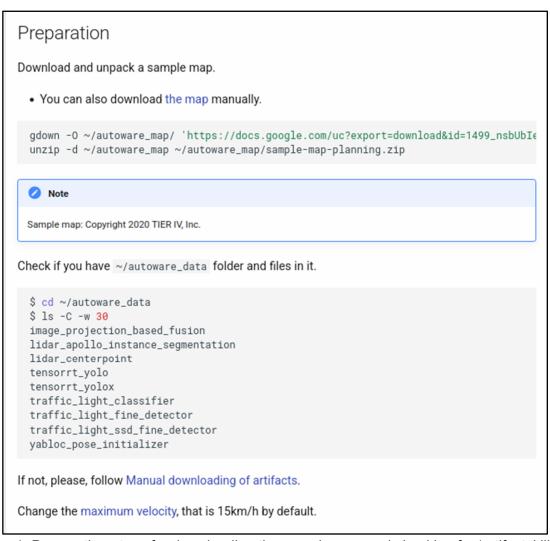


Figure 1: Preparation steps for downloading the sample map and checking for 'artifacts' library

3. Launch the basic lane driving scenario using the following command:

ros2 launch autoware\_launch planning\_simulator.launch.xml \ map\_path:=\$HOME/autoware\_map/sample-map-planning vehicle\_model:=sample\_vehicle \ sensor\_model:=sample\_sensor\_kit

You may need to change the directory of the map for the map\_path parameter to wherever you downloaded and saved your map to.

4. Experiment with basic autonomous driving simulation. Follow the directions in Autoware's documentation for basic driving, parking, pull out and over, lane changing, etc.

The results of the planning simulation should look like the following video: <u>Autoware Planning Simulator with Sample Vehicle</u>