

Test Loop — Lab Systems Test

The test loop is designed to test most of the lab's infrastructure, including the Indoor Positioning System, the Lab Control Center and the Trajectory Tracking Controller on the Raspberry Pi. But excluding the Middleware and the Matlab HLC.

This guide assumes that you have successfully compiled/installed the following: [Ubuntu & Packages](#), [NTP](#), [Apache](#), [RTI DDS Setup](#), [Indoor Positioning System \(Setup\)](#), [Compile Lab Software](#), [Raspberry Pi Setup](#).

Test Setup

Open a terminal:

```
cd ~/dev
cd software
./launch_local.bash
```

This should start the RTI discovery service, the Indoor Positioning System and the Lab Control Center.

For each vehicle: Switch it on and place it on the driving surface in the outermost lane, facing clockwise.

Now observe the LCC. All vehicles should show up within two minutes.

When all vehicles are online, open a second terminal:

```
cd ~/dev/software/controller_test_loop
./build.bash
./run.bash
```

All vehicles should start driving in a predetermined pattern, making left turns through the intersection.

The test loop was created with Matlab scripts in https://git.rwth-aachen.de/CPM/Project/Lab/software/tree/master/matlab_scripts/reference_trajectory_map2_test_loop.

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