**Lane detection supportive solutions**

After the module demo result of the camera-oriented lane detection, former solutions are considered to support camera result and enhance robustness of the tracking. Possible future solutions are the followings;

1. **Laser sensor**

As IR sensor array solution, which is already considered at the beginning of the term, laser approximate sensors can be constructed as array and used to detect edges of the lane. The expected enhancement is that laser sensors are more robust under extreme illumination conditions. To clarify the solution, two laser sensor arrays sense both sides of the lane. According to array’s data, vehicle orients itself.

1. **Color sensor**

This approach is similar to laser sensor solution, regarding the sensor array construction. However, color sensor working principle is based on RGB recognition, so in this solution green output of the arrays is focused point. According to green output, path will be detected.

**Requirements**

**Driving System**

* Motion subsystem should be controlled according to output of the computation system

**Speed subsystem**

* Vehicle should decrease its speed at the narrow lane
* Vehicle should increase its speed at the wide lane
* Vehicle should decrease its speed at the extreme disturbance

**Direction subsystem**

* Vehicle should follow the lane
* Vehicle should respond external responses

**Motion System**

* Vehicle should follow the lane

**Wheels subsystem**

* Wheel should grip lane without slipping in all conditions

**Motors subsystem**

* Motors should supply enough torque to accelerate the vehicle
* Motor should execute driving system outputs without deviation

**Structure System**

* Structure should be robust for external effects
* Structure should be balanced to increase handling

**Chassis subsystem**

* Chassis should be rigid
* Chassis should have enough space for components
* Chassis should provide low center of mass

**PCB design subsystem**

* **Bulamadım**