**Problem statement:**

A self-contained robot will be designed which follows similar robots in a single line. It will also be capable of leaving the line upon the external leave command and re-join the convoy as a last one. Robots will not communicate each-others directly, they will broadcast the information which indicates that they are leaving or they are the last one in the line. Any signal will be provided by two different actuators and be sensed by according sensors. The vehicles will keep appropriate following distance and move in the reasonable speed. When followed robot will turn on the leaving signals and start to leave the line, the following one will stop following it and look for and follow the vehicle in front of the leaving robot. All robots will have distance sensor to prevent crash. Vehicles will be able to follow leading robot when it is not following a straight line and changes its direction, also turning to the sides will not cause a problem if this process happens in the same time as a leaving process. Vehicles will be able to change their speeds as well. A vehicle should follow only the robot right in front of it and that’s why it will be able to differentiate that vehicle and the one in front of it.

**Societal impact:**

Autonomous cars are getting popular nowadays due to their obvious advantages. This project will act like an initial step toward this industry. Preventing crashes, moving in reasonable speed and being able to get out of the traffic and re-joining are the similar tasks that autonomous cars should be capable of. On the other hand experiences gained from this project can be used also in truck convoy projects similar to the one “Tesla” company is working on. Only the leading truck should have a driver and the ones follows it. This approach will decrease the drag force because vehicles will move in a line and have smaller following distance. Less drag force means less fuel consumption, less driver means less payment. Overall autonomous trucks will decrease transportation fees and contribute to the economy.