DESIGN REQUIREMENT LIST

Design requriement must (1) be as quantitative, measurable, testable, and precise as possible, (2) describe the need, not the solution, (3) be comprehensive, and (4) be presented in an easy to understand format.

Design Project Title:	Autonomous Map Follower
Team Name:	Decepticons
Team Members:	Ozioma Obiaka, Cliffton Lomax, Nicholas Baker, Isaac Collins, Endor Cooper
Date:	12/9/2008
Version No.	2

Requriements	Descriptions	Sources
Overall Function	Automatically drive vehicle to a given route and stop vehicle upon arrival at destination	Team Chrysler
Performance	System should be able to calculate destination route within 30 seconds System should automate vehice to travel at 10mph for the duration of the journey Vehicle should arrive within 3m of intended destination Upon recognition of red traffic light, the vehicle shall stop within 3 seconds Abort on-going navigation if need be within 30 seconds System should send notification within 10 seconds of arriving at destination Recognize red and green light (traffic light) at about 45 degrees angle of elevation from the front of the vehicle and stop on red light or resume on green light	Chrysler Team
Cost	Cost of prototype system willl be approximately $1000 including the processor and modifications to the vehicle to allow autonomous driving	Team
Safety	System should not increase the overall weight of the intended vehicle by more than 0.1% of the total vehicle weight	Team
Compliance	Device should adhere to the following standards -IEEE 802.11 standard for Information technology-Telecommunications and information exchange between systems-Local and metropolitan area networks -FCC standard CFR 47 Part 15 regarding unlicensed transmission	IEEE FCC
Interfaces	User Interface will be a computer system with a software allowing the user to send and receive information to the device on the vehicle. The system should also have a remote control to allow manual control after overriding the autonomous destination program Computer system will interface with the actual vehicle through actuators connected to mechanical components in the vehicle in order to control the car steering and accelerator	Team
Enery, Power, and Environment	The device should draw power from vehicle battery The system shall not emit any toxic waste	Team

Lifespan	System should last at least 100,000 miles or 5 years	Team
Size, Weight, Maintenance	User interface should weigh no more than 6 lbs Device module will weigh less than 10 lbs and total package should be no more than 7"x7"x4"	Team
Timeline and Schedule	Full design proposals completed by November 30, 2008 Evaluation and Selection of design by December 10, 2008 Simulations and Testing completed by January 15, 2009 Building completed by February 15, 2009 Final Testing completed by March 15, 2009	Team