

LABORATORY IV

BAE 5030 – In-Vehicle Networks

SPRING 2008

TITLE: Electronic Engine Test Stand.

OBJECTIVE: To develop a proposal for an engine test stand utilizing a diesel engine with a full authority J1939 Controller.

PROCEDURE: Utilize the information you gathered in Laboratory 3 to develop a proposal to Dr. Solie that promotes the acquisition of an engine test stand utilizing a diesel engine with a full authority J1939 Controller. Your proposal should describe the basics of a test stand that integrates an engine dynamometer and the electronic control system on the engine. You may use the John Deere Tier 3 PowerTech™ E 4024 Industrial Engine for your proposal or other equivalent engine. You should provide adequate information to allow Dr. Solie to purchase components and assemble the test stand. Your proposal should include a detailed description of the electronic system you propose and describe what variables would and could be monitored as well as how they would be monitored. Students will use the system you propose and you should describe the effort required to setup and use the system you propose. In addition, you should provide as a part of the proposal the background information on the variables you would monitor in a form that could be used in instructing the students. Cost of the system is an issue. You may provide an itemized list of the components that would be required and an estimated cost. Your cost estimate should include costs to fabricate and assemble the system as well as develop any software needed for the system.

ANALYSIS AND REPORTING: Provide the proposal in a form that will convince Dr. Solie to adopt your proposal. The quality of the case you make and the extent to which your proposal is convincing will be the primary factor in grading your effort. Your proposal will be ranked compared to your colleagues and the best proposal(s) provided to Dr. Solie to attempt to convince him.