

SAMPLE STATEMENT OF WORK FOR A SCOPE PROJECT

Project: Smart Dozer

Goal: The goal of this project is to explore building a control system for a standard D-9 bulldozer that would take supervisory control of the vehicle's grading blade, based on precise GPS coordinates and allow an unskilled operator to achieve the same level of performance as a highly skilled one.

Development plan: The SCOPE team will first survey the current state of the art in those technical areas needed to integrate the dozer control system. Based on the information collected in this survey, they will propose an initial system design consisting of three parts:

- a) a detailed hardware system diagram
- b) a detailed control software diagram
- c) an estimated cost "bill of materials"

After reviewing this system design with their company liaison and incorporating company feedback, the team will seek to demonstrate the overall feasibility of their design by demonstrating that they can overcome the 3-4 main risks to program success by a combination of acquisition, experimentation or analysis. They will deliver the results of this feasibility study to their liaison for review over winter break, with the plan to build a working prototype of the full system by the end of the spring semester.

It is understood that the working prototype will be a "proof of principal" class device and will require additional professional engineering in order to be used in an open marketplace.

Company furnished equipment: One CAT D-9 bulldozer. To be returned to company at close of project.

Final Demo: SCOPE team will demonstrate and videotape a prototype Smart Dozer leveling a 30 x 60' work zone consisting of sandy soil.

Deliverables: The SCOPE team will deliver a mid-year report consisting of a feasibility plan and a set of recommended courses of action by December 22nd. The team will deliver a final report consisting of a full set of schematics, design documentation and software by May 15th.