



THE PHOENIX INITIATIVE

To Whom It May Concern:

We are writing to you as students of the Engineering Design & Development class at the California Academy of Mathematics and Science, a magnet school on the campus of California State University, Dominguez Hills. The class consists of an intense, year-long project that incorporates a wide array of disciplines which include, but are not limited to, engineering, mathematics, science, and business. The class is divided into two independently run engineering firms consisting of roughly 15 students each who are competing for a contract from the CAMS Advanced Research Projects Agency (CARPA), a fictitious entity based off of DARPA. Our firm is called the Phoenix Initiative.

This year, the project deals with utilizing autonomous modular component robotics to repair a malfunctioning planetary rover. Our mission is to design and manufacture a RepairBOT with a Modular Repair Mechanism (MRM) to locate, restore power to, and reprogram a dysfunctional rover on the simulated surface of 2001KX76, a dwarf planet located in the Kuiper Belt.

Our MRM must first survive a simulated rail gun (air cannon) launch with a maximum height of approximately fifty feet and the subsequent landing. After locating the dysfunctional rover, our MRM will attach itself to the rover, connecting mechanical and electrical components. Our MRM will also replace the rover's damaged Scientific Experiment Suite (SES), a system capable of biological and environmental testing, with an improved functional model. The rover will then continue conducting biological and environmental tests with the updated SES.

The purpose of this letter is to solicit your opinions regarding various aspects of the robot's capabilities. We only ask for a few minutes of your time to complete the attached survey. Your response to the survey will assist our team in designing a robot that achieves the design requirements.

Thank you in advance for your time,

Sincerely,

The Phoenix Initiative