Detecting and Creating a 2D Heatmap of Radiation Hot Spots via Unmanned Ground Vehicle

Natalie Hales[1], Spencer Lee[2], and Edward Londner[2]

[1]Department of Mathematical Sciences
[2]Department of Systems Engineering
United States Military Academy, West Point, NY

Corresponding Author: natalie.hales@westpoint.edu

Abstract: The Army's chemical, biological, radiological, nuclear, and explosives (CBRNE) units respond to the any threat involving CBRNE elements. Their missions often involve the search and identification of radiation sources in a compromised facility. A major concern with this mission is the survivability of the Initial Entry Team, who is tasked with surveying the volatile indoor environment for data. The creation of a system to assist in, and expedite, the process of initial entry will greatly increase the health and welfare of the team. In order to localize and detect radiation in a potentially contaminated indoor environment, our team will develop the RADBOT, an unmanned, tethered robot that can detect and map radiation. This paper will summarize the research, design, testing, and results for the development of the RADBOT system.

Keywords: Radiation, Detection, Robot, Unmanned, Tethered