**International Academy of Science, Engineering and Technology**
Connecting Researchers; Nurturing Innovations
**IASET**

# DEVELOPMENT OF A REMOTELY CONTROLLED VEHICLE

*Janvier Kamanzi*

*Research Scholar, Faculty of Engineering, Department of Mechanical Engineering Mechatronics Program, Cape Peninsula University of Technology, Symphony Way, Bellville Cape Town, South Africa*

## ABSTRACT

*An estimate of more than a hundred million landmines laid across multiple countries is undetonated, while lots of new landmines are being planted to this day. Through history, people have been investing effort in developing safe and accurate technologies in response to the ever-increasing figures of landmines. Some of these technologies include animal detection, prodding, mine clearing vehicles, ground penetrating radar and hand-held metal detectors. Although these technologies have each had their success in reducing the landmine count across the world, they still do have disadvantages. In the process of developing a novel technology, this paper covers a literature review on existing technologies and highlighted that their critical shortfall pertain to the safety of the operator. Most of the existing technologies require operators to move the detecting systems in places where landmines are to be uncovered, thus putting their life at risk. The paper provides an overview of research done into metal detectors. The paper then describes the design of a remotely controlled vehicle dedicated for landmine detection. The system design describes how the different parts of the design comes together to create a working system. Each major component is thoroughly described along with the motivation behind the component selection. Firmware, circuit design and each aspect of the design are detailed. The paper concludes that a fully functioning and collision-avoiding prototype has been successfully developed to detect landmines using a webpage and a built-in metal detector. Finally, a room for improvement on the design has been indicated.*

**KEYWORDS**: *Colpitts Oscillator, Embedded Systems, Industrial Revolution 4, Landmine Detection, Mechatronic, Robotics*