

Smart Triggering Weapon System for Military Application

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Abstract: In India, Border security depends completely on the soldiers. This is a task taken up by the military which is important and also necessary. To reduce the burden on the soldiers we use robots which also helps in increasing the security around the border areas. The current weaponized robotics system which is very useful for border security and surveillance is too expensive, while the demand for their application has been increasing which is why they are taking the help of the existing human teams to solve the dangerous missions. This project aims to solve this problem as we develop a robotic device of low cost that is capable of firing precisely and secured by using a variety of semi-automatic weapons at the targets. This project consists of 3 steps: detection of the human intruder face, wireless communication, and triggering of the weapon. For the purpose of this project, we use a microcontroller-based automatic system. The basic idea of this system is to detect the human intruder by using an ultrasonic sensor. By wireless communication, the information will be sent to the military camp, which will trigger the gun to shoot the enemy. The main objective of our paper is to develop a low-cost robotic device to secure the border area, where surveillance is very difficult for soldiers.

Keywords: Human intruder, wireless communication, ultrasonic sensor, Microcontroller

REFERENCES

- [1]. Karthick, R., A. Manoj Prabakaran, and P. Selvaprasanth. "Internet of things based high security border surveillance strategy." Asian Journal of Applied Science and Technology (AJAST) Volume 3 (2019): 94-100.
- [2]. Dhulekar, P. A., et al. "Surveillance system for detection of suspicious human activities at war field." 2018 International Conference On Advances in Communication and Computing Technology (ICACCT). IEEE, 2018. the jiffy plugs and the pH level and moisture level can be obtained.
- [3]. D. Arjun, P. Indukala and K. A. U. Menon, "Integrated Multi-sensor framework for Intruder Detection in Flat Border Area," 2019 2nd International Conference on Power and Embedded Drive Control (ICPEDC), 2019, pp.557-562, doi: Ref. 10.1109/ICPEDC47771.2019.9036577.
- [4]. Seunghan Lee, Saurabh Jain, Yifei Yuan, Yinwei Zhang, Haomiao Yang, Jian Liu, Young-Jun Son, "Design and development of a DDDAMS-based border surveillance system via UVs and hybrid simulations", Expert Systems with Applications, Volume 128, 2019
- [5]. Ambika M S ,Ananya S Rao ,Chandini G S ,Hamsini S Ram, Dr.Sushma.S.J, "Design and Implementation of Automatic Multifunctional Military Robot" International Journal of Engineering Research & Technology (IJERT), 2021
- [6]. Raheja, Jagdish Lal, Swati Deora, and Ankit Chaudhary. "Cross border intruder detection in hilly terrain in dark environment." Optik 127.2 (2016): 535-538.
- [7]. Aditya Prasad, Jayant Gupta, Yogesh Sharma, M. Jasmine Pemeena Priyadarsini. "Automatic Gun Targeting System using Face Detection, IR and Ultra Sonic Sensor." International Journal of Engineering and Advanced Technology (IJEAT), June 2020
- [8]. ALshukri, Dawoud, E. P. Sumesh, and Pooja Krishnan. "Intelligent border security intrusion detection using iot and embedded systems." 2019 4th MEC International Conference on Big Data and Smart City (ICBDSC). IEEE, 2019.
- [9]. Sun, Zhi, et al. "BorderSense: Border patrol through advanced wireless sensor networks." Ad Hoc Networks

9.3 (2011): 468-477.

- [10]. Ahmed, Hanaa Mohsin, and Haider Saad Essa. "Survey of intelligent surveillance system for monitoring international border security." *Materials Today: Proceedings* (2021).