ABSTRACT

Indonesia, with a land area reaching 1,905,000 square kilometres and a population of 275,361,267 spread across various regions, from urban to forested areas, faces diverse natural phenomena such as floods, tornadoes, and fires. The issue of fires remains a primary concern, especially in vulnerable open land and forested areas. The challenges of extensive geographical coverage and limited resources constrain the surveillance capabilities to address these incidents, further exacerbated by a shortage of personnel to respond to such phenomena. This research proposes the utilization of *Drone* technology as a solution to overcome the fire issue. *Drone*s are considered surveillance units capable of flying to fire-prone areas, detecting ignition points, and transmitting danger signals along with precise location coordinates. By harnessing *Drone* technology, surveillance coverage can be extended to previously hard-to-reach or challenging-to-monitor regions. The study emphasizes the potential of *Drone* technology as a crucial component in Indonesia's fire management strategy. In this research, *Drone*s, web, and *Machine Learning* are successfully integrated into a surveillance framework that can address resource limitations, assist in early fire detection, and facilitate swift mitigation efforts. The study also contributes to knowledge and the evolving understanding of *Drone* applications in disaster management within complex and extensive landscapes. Additionally, this research offers a pathway to a more effective and efficient response to fire incidents.

Keywords: *Smart Drone*, Machine Learning, Web, Fire Mitigation, Forest Fire