

Technology–Driven Agility in Unmanned Aerial Vehicle Systems Introduction Automation technology (AT) has gained popularity in many industries worldwide, particularly autonomous vehicles. Increased technologies have enabled scientists to develop agile systems with a wide range of applications

Continuation The main technological components of drones include an accelerometer and GPS (global positioning systems). While errors in the use of drones have caused several challenges or risks to the safety of individuals in various sectors of its applications, the goal is to examine how to use a counter UAV system that protects personal, commercial, public, or military facilities from uncontrollable UAVs. The technology, often referred to as unmanned aerial vehicles (UAVs), has diverse applications, including military, construction video mapping, medical search and rescue, hidden area exploration, oil rigs, and aerial surveillance (Mohsan et al. 1). Some of the drones have fired weapons at civilians, leading to notable levels of casualties, harm, and damages due to errors with software patches or malfunctions.

Related Literature In recent times, agriculture presents an ample scope for drone development because it reduces economic costs in the sector (Rahman et al. 1). Due to the rapid development of the technological world, the UAVs have gained attention since they have peculiarities, especially payload capabilities, swift mobility, and remote access. The study illustrates that drones can spray pesticides and fertilizers, perform field analysis, and seed and soil sowing during farming. According to Kang et al., implementing drones for different functionalities, including military or personal use, may present challenges, among them intentional malfunctions or attacks (168671). In examining their popularity, Kim et al. opine that they first gained fame for use in military reconnaissance, intelligence, surveillance, and target acquisition applications (3). Others have revealed that by learning the way the UAV communicates with the remote controller, one can execute an attack and potentially assume control over it (Mohsan et al. 147). Consequently, the analysis explores the capabilities and emerging applications of UAVs. However, the recent exploration of drone technology has gained an exceptional range of applications because of the technologically savvy environment. A survey of UAVs reveals an issue with the use of drones due to the dangers they pose. UAVs are systems operated remotely to perform tasks depending on the requirements. Additionally, it plays a pivotal role in enabling drones to use fixed satellites to obtain location information.

Problem Statement and Rationale for Focusing on UAVs UAV technology has changed many industries. Besides, the use of drones has been criticized for causing safety downfalls (Nawaz et al. 87). Those that are outfitted with high–quality sensors identify probable collisions and securely avoid obstacles. The technology used in drone design is still being improved to alleviate accidents or dangers that can influence the health and safety of human lives. When a drone operator moves in a domain with a notable number of wild animals, it is possible to crash against a tree or lead to a conflict with a susceptible animal. Therefore, as much as evidence reveals the advantages of using UAVs, there appear to be some drawbacks that have to be addressed. When used in this method, the farmers would reduce the health concerns from using pesticides and fertilizers. Despite the fact that drones focus on perfection, they are crafted flawlessly. Safety is a primary element that should be prioritized when operating them. The failure to navigate barriers can lead to harm not only to humans but to their properties due to the collisions and related risks. A counter UAV system should be used to safeguard personal, commercial, public, or

military facilities from the uncontrollable ones. The reason for selection is that their utility has been growing across different sectors (Mohsan et al. 147). Both software and hardware of the devices are susceptible to certain risks, including security issues. Considering the wide range of applicability of drones, one should anticipate that security is a top priority for professional UAVs. Studies depict that professional UAVs are not as safe as one could anticipate. Besides, the number of workers would reduce, helping the farmers to reduce the cost of farming. It enables the drone operator to know the exact position and orientation of the vehicle. They can easily and quickly become manipulated and trespass on an individual's privacy. Besides, they are susceptible to software issues or malfunctions. Hence, they have a wide array of matters that need to be understood and addressed. Another related application is in protecting various systems from uncontrollable UAVs. This research reviews the UAVs for application and capabilities. The former plays a critical role in estimating the orientation and the drone's position during flight. However, despite all its benefits, it has a few drawbacks. They are susceptible to wild animal attacks. Besides, they are at times dangerous to nature (Nawaz et al. 89).