Chapter 10
Internet of Unmanned Aerial Vehicle (IOU) in Industry 5.0

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ABSTRACT

The internet of unmanned aerial vehicles (IOU) is a layered network control architecture that is designed primarily for coordinating unmanned aerial vehicle access to controlled airspace and providing navigation with the latest innovative technology upgrades. Human-robot co-working is an emerging subject in Industry 5.0 visions. The IOU provides generic services for a wide range of such as package delivery, traffic monitoring, search and rescue, and multiple applications. In this chapter, the authors present a conceptual model of how such an architecture can be developed as well as the components of an internet of drones system based on artificial intelligence, machine learning, and digital twin are discussed. The future of drones will focus on the thrust area of computer-based domains.

INTRODUCTION

Industry 5.0 uses Industry 4.0 technologies with an optimizing approach for dealing with multiple manufacturing applications. This new industrial revolution will be able to meet the precise and sophisticated needs for high-quality components. The fifth industrial revolution is known as Industry 5.0. It consists of wirelessly connected novel technologies to improve manufacturing and automation. Industry 5.0 is a new technological innovation that enhances the interaction between humans and machines. It introduced cutting-edge technology for producing goods and services that are environmentally friendly, efficient, and safe. The concept of Industry 5.0

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is gaining traction as intelligent and creative technologies emerge and is coming to solve the negative impact of Industry 4.0 technologies on the job market.

The Internet of Everything (IOE) is a technology that expands on the Internet of Things concept (IoT). In the context of IoT, it refers to a more complex domain that includes people and processes, as opposed to the machine-to-machine concept. This technology provides a platform for all areas of engineering and technology.

Kevin Ashton of the Radio Frequency Identification (RFID) enhancement network proposed the Internet of Things (IoT) concept in 1999. It has recently become more grounded in the world due to the proliferation of cell phones, digital transformation and cross-platform correspondence, distributed computing, and data analytics. In the field of information technology, IoT has become a well-known term. IoT transforms any real-world object into a bright object (Alipour et al., 2019). IoT gives us access to the things around us and keeps us updated on their progress.

Investigation framework that conveys innovative administrative frameworks arranged and intelligent reasoning innovation (Chen et al., 2019). The IoT system and action plans. Several devices are linked through a system provider in more innovative business models, and clients can use remarkable and supportive apps by using the right stage. They also employ cutting-edge technology and empower solid innovation to improve data collection and information activities, among other things (Ezuma et al., 2019). The Web of Things is a collection of interconnected and collaborating objects that work together to create innovative solutions. These items can be virtual real-world data or physical models. Artificial intelligence (AI) is a tool that can help track data and provide information on a real-time basis. Furthermore, unmanned flying machines used for various purposes, including surveillance integration with AI, lead to innovative technology applications.

For instance, Prasad et al. (2018) conducted detailed research on drones' influence on unmanned aerial vehicles in medical product transport. Yet, it was Prasad (2020) who analyzed the performance estimation of twin propellers in unmanned aerial vehicles. However, Prasad et al. (2018) proposed positioning UAVs using an algorithm for monitoring the forest fire region. Naveen Kumar et al. (2018) studied forest fire detection using unmanned aerial vehicles; Rajasekar et al. (2018) conducted an experimental investigation of the bio-inspired tubercle in Propeller's unmanned aerial vehicle.

BACKGROUND

Thanks to Industry 5.0 technologies, all machines and medical devices used in healthcare can now be connected. As a result, it is possible to improve machine-to-machine communication, which aids in the efficiency of the treatment process. In