

# An Investigation of Operational Concepts and Issues in Air Traffic Management

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## Editorial

The rapid growth of unmanned aerial vehicles (UAVs), combined with low development costs, high air mobility and a wide range of applications, offers new business opportunities in both civil and non-civil applications. In recent times, drones are also commonly referred to as unmanned aerial vehicles, air vehicles, flying machines, etc. However, NASA called the drones commonly referred to as UAVs. Drones are flying robots that will fly autonomously or remotely by human pilots. Some of the applications of drones are package delivery, aerial mapping, agriculture, wildlife conservation, aerial photography, surveillance, rescue operations, etc. It is of us the recent development and use of drones is largely driven by advances in battery technology, durability, propellers, gyroscopes, GPS, cameras and sensors, and public accessibility. The assembly of small UAVs (UAVs) has made the technology modern, inexpensive and easy to use with access to all or part by offering a range of applications has become a valuable resource for technical use and a standard recreational consumer audience. Drones are often used in dangerous situations where the presence of a person is extremely difficult or almost impossible. However, drones could not be fully applicable due to a number of obstacles such as complex environments, limited detection capabilities, communication issues and power issues. As efforts are made to address these shortcomings, a more efficient and effective system is needed in terms of advanced sensor recognition, efficient automatic navigation, etc. In addition, Traffic Management (ATM), which controls and operates commercial aircraft, cannot handle UAVs in uncontrolled airspace. NASA developed an internal control framework for low-flying non-commercial aircraft in 2013 to ensure safe entry of aircraft into airspace. Since 2016, NASA has led several UAS Transportation Management (UTM) research and development projects with a number of industry members as part of the Test Capability Level (TCL) program. The many successful tests and demonstrations for UAV mission planning, long range deployment and line of sight (BVLOS) drills demonstrate the continued evolution of UAV air traffic management. However, admitting the use of drones in commercial and public spaces also has its downsides. Drones are often used as surveillance drones or are often used to transport malicious weapons. To prevent such harmful actions and to meet the needs of urban traffic management services,

it is necessary to set up a management system for the worldwide distribution of drones. The Federal Aviation Administration (FAA) in the United States and the European Aviation Safety Agency (EASA) in Europe are two important and active regulatory bodies that strive to secure regulations and opportunities for drones on the market. Likewise, there are many other countries, such as Korea, Japan, China, Australia, UK, and Singapore, which have their own regulatory bodies and government organizations to oversee drone regulations and low-end UTMs. UAS Service Providers (USS) are an important component of the UTM system, with huge opportunities for market expansion worldwide. Some of the essential requirements of the UTM are identification, airspace management, flight operations and management, flight permits, obstacle information, warning messages, meteorological information, the characteristics of the black box, etc. Given the exponential growth in the use of air vehicles, it is clear that an airspace management service is required to regulate and operate these air vehicles at very low altitudes. The huge volume of aircraft complicates the long-term air transport system. Therefore, innovation, multi-dimensionality and multi-dimensional traffic management are required for drones and other flying vehicles to function properly. Management services, there is a regulatory system for the deployment of drones around the world. The Federal Aviation Administration (FAA) in the United States and the European Aviation Safety Agency (EASA) in Europe are two important regulatory agencies and actively work to create regulations and opportunities. For commercial drones. Likewise, there are many other countries, such as South Korea, Japan, China, Australia, UK, and Singapore, that have their own regulatory bodies and government organizations to oversee UAV regulation and low-level UTM. UAS Service Providers (USS) is an important component of the UTM system, offering tremendous market expansion opportunities around the world. Some of the basic requirements of UTM are identification, airspace management, flight operations and management, flight authorization, obstacle information, warnings, weather information, black box functionality, etc. With the exponential growth in the use of aircraft, it is clear that an airspace management service is needed to control and operate these aircraft at very low altitudes. The large volume of aircraft makes the future air transport system more complex. Therefore, innovative, multidimensional and multidimensional air traffic management is required for the normal operation of drones and other air vehicles.

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