

# Unmanned Aerial Systems (UAS): Prospects, Challenges and Opportunities

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Last fall we were privileged to do the economic impact study to show what affect unmanned vehicles (UAS) would have on the US economy. We demonstrated that if we can find a way to integrate these unmanned vehicles into the national air space, it will have a tremendous effect on the economy. Thousands of good paying jobs will be created. This is impetus enough to put this issue on a faster paced track.

An unmanned aerial system (UAS) is an aircraft without a human pilot on board, it is a remotely piloted aircraft system (RPAS). About 50 companies and private and public institutions in the U.S. are developing over 150 different unmanned aircraft designs. Because UAVs are not burdened with the physiological limitations of human pilots, they can be designed for maximized on-station times. Today, UAS come in a variety of shapes and sizes and serve different purposes. These aircraft can be deployed in a number of different terrains and may be less dependent on prepared runways. In addition to its military application, expectations for unmanned aircraft systems (UAS) run high within the general aviation and commercial industries.

Currently UAS are used commercially in over 35 countries. The Europeans are way ahead of the United States as are the Israelis, Asians, British, Canadians, and the Australians. While the United States is at least two or more years behind their deadline, the Europeans already have a set of rules nearly ready to start. We cannot allow our position in this industry to be compromised due to governmental bungling. At the same time, this needs to be approached with more rigors.

While the business outlook for UAV's is promising, there are a number of difficult issues ahead to be solved. The most important is the issuance of regulations from the federal Aviation Administration (FAA). At this time, there is scant progress on this front, but hopefully with the beginning of setting up state test sites, this will go faster.

In addition, there is the nagging issue of privacy. This is a very hot issue given the US government's lack of ability to properly police itself. While integration and the emergence of this industry is a civil matter rather than a governmental one, this will need to be well thought out. Proper policies need to be put into place that ensures that these will be used only for the commercial purposes for which they are intended. Guidelines need to be put up so that anybody misusing these will be properly punished and not allowed to operate in the US air space again. To show the dissonance that exists in state government circles, the same states that are enacting laws to limit usage of UAS are the same states getting in line to do testing. The states see the economic promise and at the same time want proper guidelines.

There are a number of different markets in which UAS can be used. UAS are already being used in a variety of applications, and they may be able to perform a variety of unique tasks apart from what they are capable of today, such as:

- Aerial imaging/mapping
- Agricultural monitoring
- Disaster management
- Freight transport
- Environmental monitoring
- Law enforcement
- Oil and gas exploration
- Public safety and services
- Telecommunication
- Television news coverage, sporting events, moviemaking
- Thermal infrared power line surveys
- Weather monitoring
- Wildfire mapping

As with any emerging technology, the potential economic benefits could be tremendous. AUVSI's findings show that in the first three years of integration more than 70,000 jobs will be created in the United States with an economic impact of more than \$13.6 billion. This benefit will grow through 2025 when we foresee more than 100,000 jobs created and economic impact of \$82 billion.<sup>1</sup> This is too important an issue for the typical Washington inattention.

1. The Economic Impact of Unmanned Aircraft System Integration, AUVSI, March 2013.

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