▷▷▷ UNMANNED AIRCRAFT SYSTEMS

International industry development, growth, and investment over the past several years have allowed Unmanned Aircraft Systems (UAS) to evolve from remotely piloted vehicles with limited capabilities to semi and fully autonomous systems for commercial applications. There are some 100 U.S. companies, academic institutions, and government organizations developing over 300 UAS designs. Currently, the U.S. government uses unmanned aircraft for military combat, surveillance, and reconnaissance.

The UAS term is used because it includes the entire system (aircraft, data links, control station and other elements). UAS's also vary widely in size, shape, and capabilities. Some unmanned aircraft weigh 1,900 pounds and can remain aloft for 30 hours or more, because there is no need for them to land to change pilots. Some are 6 inches long. Others can perform dangerous missions without risking loss of life.

In its broadest context, there are three major market segments: military, civil government, and commercial. While market drivers and dynamics among these segments differ significantly, they share common objectives: to provide a service that cannot be accomplished by manned aircraft and/or to perform an existing manned operation at a lower cost. The investments and the technological advances in UAS's made by military organizations have generated a growing interest in their potential use for civil, government, scientific research, and commercial applications. Federal agencies are planning to increase their use of UAS's and state and local governments envision using UAS's to aid in law enforcement and firefighting.

The FAA has worked with the Aviation Rulemaking Committee (ARC) comprised of industry, associations, and other government agencies. The ARC delivered the recommendations to the FAA that would address the operation Unmanned Aircraft under 55 pounds within the National Airspace. The FAA is in the process of drafting regulations to facilitate: certification of pilots; registration of aircraft; approval of sUAS (small unmanned aircraft systems) operations when required; and define sUAS operational limits, best practices, and regulatory approach for all sUAS.

Once enabled, commercial markets will develop in markets such as real estate photography and aerial inspections. These sUAS could perform missions with less noise and fewer emissions than manned aircraft. Once the regulatory structure is in place and markets emerge within the regulatory framework, a viable fleet will develop.

Based upon the expected regulatory environment, FAA is projecting a fleet of 10,000 active sUAS in five years. In ten years, the fleet is projected to increase to 25,000 units and grows to 30,000 units by 2030. With the safe integration of sUAS into the National Airspace system, both civil and commercial applications will develop and UAS have the potential to become a major component of commercial aviation within the United States.