

▶▶▶ 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. Because of increased interest and activity, UAS have the potential to become a major part of the commercial aerospace industry within the United States.

Working with industry, the FAA is starting to create regulations for small UAS's to fly in the airspace. To this end, an Aviation Rulemaking Committee (ARC) comprised of industry, associations, and other government agencies has been formed. This ARC will recommend defining and developing necessary interim policy guidance with corresponding training material for operating a small size category UAS within the National Airspace System.

Federal agencies are planning to increase their use of UAS's. State and local governments envision using UAS's to aid in law enforcement and firefighting. Potential commercial uses are also possible, for example, in real estate photography or pipeline inspection. UAS's could perform some manned aircraft missions with less noise and fewer emissions.

The new UAS technologies under development today may have a profound impact on all aviation. The investments and the technological advances made by military organizations have generated a growing interest in their potential use for civil government, scientific research, and commercial applications. Once the regulatory framework is in place and developers can safely test and evaluate their products within the NAS, we expect significant growth in the civil and commercial UAS market.