Note from the Editor on Unmanned Aerial Vehicles

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EDITORIAL NOTE

A drone or Unmanned Aerial Vehicle (UAV) is an aircraft that does not have a human pilot on board. An Unmanned Aircraft System (UAS) comprises of a UAV, a ground-based controller, and a communication mechanism between the two. In terms of flying autonomy, UAVs can have varied degrees of autonomy. As opposed to crewed aircraft, UAVs were initially utilised for tasks that were too "dull, unclean, or dangerous" for humans. Aerial photography, package delivery, agriculture, enforcement and monitoring, infrastructure inspections, research, smuggling, and drone racing are just a few of the uses for drones, which were originally created for military use.

According to the definition, a UAV is a "powered, aerial vehicle without a human operator that uses aerodynamic forces for vehicle lift, can fly autonomously or be piloted remotely, can be expendable or recoverable, and can carry a lethal or nonlethal payload." As a result, because missiles are a one-time-use weapon, they are not categorised as Unmanned Aerial Vehicles (UAVs).

Unmanned Aerial Vehicle (UAV) and autonomous drone are terms that are frequently used interchangeably. This could be because many UAVs are autonomous, which means they can undertake automated missions but still require human operators to operate them.

An autonomous drone, on the other hand, is an "Unmanned Aerial Vehicle" (UAV) that can operate without human intervention. Autonomous drones, to put it another way, take off, fly missions, and land on their own. The relationship between UAVs and remote-controlled model planes is uncertain.

Some jurisdictions classify UAVs based on their size or weight; however, the US Federal Aviation Administration considers any unmanned flying craft, regardless of size, to be a UAV.

Although multi-role airframe platforms are becoming more common, UAVs usually fall into one of five functional categories:

- Battle-Offering attack capabilities for high-risk missions (e.g., Unmanned Combat Aerial Vehicle (UCAV) and loitering munition, also known as a suicide drone)

- Reconnaissance-An unmanned reconnaissance aerial vehicle that collects data on the battlefield

- Goal and decoy-Presenting a target that resembles an enemy aircraft or missile to ground and aerial gunners

- Delivering freight is what logistics is all about

- Commercial and civil law

The biggest difference between planes and cars is the lack of a cockpit and its windows. Tailed mono and bicopters are typical for crewed platforms, while tailless quadcopters are preferred for rotary wing UAVs. I'm hoping a motivated trainee will see the same benefit. A low-fidelity simulation method can help a trainee enhance their initial performance in robotic surgery, but additional research is needed. The goal of this paper and accompanying video is to use a low-fidelity way to help those who are new to robotic-assisted surgery learn basic skills even before they sit at the console.

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