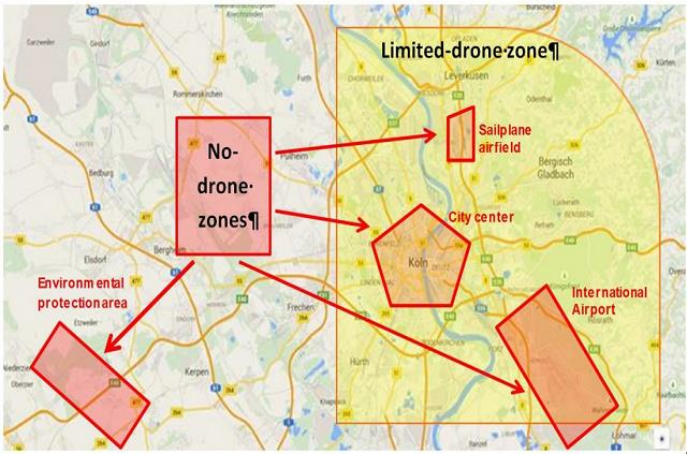
23JUN2016 Ben Drone

Geofencing System—A Step Toward Securing Our Airspace

Parker Gyokeres, a retired U.S. Air Force officer and photo journalist who now owns an aerial photography business, has flown drones for photo and video missions for various clients including Nike, Wu-Tang Clan, and Department of Defense.

On several occasions, Gyokeres's DJI Inspire drone will not take off as a result of built-in geo-fencing software, which is comprised of invisible guardrails that prevent pilots from straying into restricted areas. Such areas include no-fly zones such as airports; capital cities like Washington, DC; public spots like Tiananmen Square, and even decommissioned blimp bases.



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"I went for a job in Massachusetts and armed the drone, but it didn't take off because it was on the perimeter of an abandoned Navy airfield," Gyokeres said. The Naval Air Station South Weymouth in Abington, Massachusetts, served as home for Squadron ZP-11 during World War II and has not been used since 1997. Even though the airfield was abandoned, the "No Fly Zone" feature in DJI's A2 Flight Controller system still had it tagged as an off-limit zone. The inability of the drone to fly at the airfield is a good example of how geo-fencing system operates.

Geo-fencing systems such as 3D Robotics, DJI, and Yuneec are incorporated in the newly manufactured drones to help curb reckless flights and prevent the drones from entering restricted airspace using GPS coordinate. Also, this system can keep the drones out of trouble as the ban on flying drones at the nation's capital was as a result of a drone that crashed on the White House lawn.

The current geo-fencing system may not be perfect, but it is believed that this system will become more accurate, dynamic, and communicative in the next few years.

Problems with Current Geo-Fencing System

Most of the early geo-fencing systems, like the DJI's No Fly Zone feature, which was launched in 2013, were developed by the manufacturers of the drones. However, it is difficult to update such systems on temporary restricted areas such as wildfires, presidential motorcade, or even airspace over a life

sporting event. These systems do not have information about recently restricted areas.

Another limitation of the geo-fencing systems is that they are only found in costly “prosumer’’ drones that require substantial skill to operate. The users of such drones are professionals who are licensed by FAA to use the drones for commercial purposes such as aerial photography, videography, and cinematography—this is why the system is not available in toy-like drones whose users are mostly kids and inexperienced operators.

Advanced Geo-Fencing System

Santa Monica–based company AirMap has shown interest in creating a more advanced drone mapping. The company is developing DJI and 3D Robotic geo-fencing systems. Currently, AirMap powered DJI GEO system is available as a public beta while 3D Robotics, which has a built-in AirMap Solo app, has a closed beta.

The ultimate goal of AirMap is to become the world controller of drones. In addition to permanent flight restrictions and information on international airspace, the company plans to create drones equipped with temporary flight restrictions. “We obtain our temporary restriction information directly from the FAA, except information that the FAA does not publish,” revealed **Greg Mcneal**, AirMap co-founder.

With the recent development in the production of drones, cheaper drones without GPS features can use smartphones as a tethered source of airspace information.

Watch the video below
https://youtu.be/YoXAMRQoIAA

DJI - Phantom Firmware update Safety feature integration

AIRMAP DRONE GEOFENCING SYSTEM NAVAL AIR STATION SOUTH WEYMOUTH PARKER GYOKERES