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DIY TECH



Digital Clinic

BY DAVEY ALBA

Q | A

Drone Laws

I'm interested in building a backyard drone, but I don't want to ruffle any feathers. What FAA regulations and privacy laws should I be aware of before I jump in?



If you intend to build and fly a drone recreationally, you face only a few restrictions, which come to you courtesy of the Federal Aviation Administration. Just make sure your unmanned aerial vehicle flies within your line of sight, less than 400 feet above the ground, during the day, and more than 3 miles from any airport. (You'll be in even better shape, according to the FAA's recommendations, if you choose an operating site far from noise-sensitive and densely populated areas such as parks, schools, and hospitals.) These rules, detailed in FAA Advisory Circular 91-57 and published in 1981, were written for model aircraft, but for now the FAA is applying the same rules to UAVs (see "Drone Skies," September 2013).

It gets more complicated when individuals or companies want to fly UAVs for commercial purposes. One example would be Amazon's

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proposed drone delivery service, but more here-and-now ideas include shooting advertising videos or conducting real estate surveys. There's currently no legal way to operate drones for profit. Under FAA rules, the only way for a company to fly drones is to apply for an experimental airworthiness certificate, which the agency hands out to groups with research-and-development goals.

Changes are on the way, however. Congress has directed the FAA to devise rules by late 2015 in order to integrate UAVs into the nation's airspace, with an earlier deadline of August 2014 to formulate regulations for small, recreational UAVs weighing less than 55 pounds. This could be an opportunity for lawmakers to establish new rules that allow hobbyists to fly drones with even more freedom.

Meanwhile, all but seven states have proposed or adopted laws relating to the use of domestic drones. A number of these laws focus on civil rights—for instance, requiring police departments to procure warrants before they can use UAVs in criminal investigations. But some states, notably Texas and Idaho, have passed limitations on the private use of drones. Idaho's legislation bars citizens from capturing photographs of private property without the owner's permission. And the law in Texas severely restricts recreational drone use while granting wide exemptions for police, real estate agents, and oil and electrical companies.

Omniscient Objects

I've started to welcome more and more smart gadgets into my home, like thermostats, smoke detectors, locks, and lightbulbs. But I'm concerned: These devices collect data on my habits and power usage.

Who has access to it—or can demand access to it?

An increasing number of objects—in the home, the car, and even the office—are being embedded with sensors and are acquiring the ability to communicate. They help make up the so-called Internet of Things, a rapidly growing product category, with items that range from gratuitous (Internet-connected toothbrushes) to lifesaving (water-leak sensors that can help you catch floods in your home when they start). Google, for one, apparently expects it to be an enduring trend: In January the company paid \$3.2 billion to buy Nest Labs, which makes smart thermostats and smart smoke alarms. Competing product lines include Lowe's Iris system, and a range of modular sensors made by SmartThings, a connected-home startup.

The way the companies deal with user data varies with the architecture of their products and how they link up to the Internet. For example, Nest devices collect and process data locally, but the data is sent to the servers periodically to be analyzed for feature improvements and energy reports. The company says only a handful of members of an internal-quality team see any information, and it's a mere sampling of what's generated by all the Nest products in people's homes. Of course, users themselves have access to a snapshot of their data via the company's mobile apps.

In contrast, most SmartThings products rely on cloud services to operate. For instance, a user can receive a push or text notification if a water leak is detected, or simply when a child gets home from school. The company's CEO, Alex Hawkinson, says that SmartThings analyzes some of the data to help it improve its products and services but that the information is anonymized.

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"There's no way for us to know, for example, that somebody in New Jersey has an 8-year-old daughter named Katie, just because they use our system," Hawkinson says. He promises the company would try to resist any government request to access the data, though it hasn't come up. "We believe that consumers should own their physical graph, and all of the data that results from that physical graph," Hawkinson says.

Nest cofounder and engineering vice president Matt Rogers says his company has never received a government request for customer information. "Our contract with our users is that we will keep their data private," he says. The company has publicly stated that any data sharing that happens with Google, its new owner, will be transparent and require the user's permission. But Nest has also hinted that deep-data integration with Google could be coming soon. In the future, conceivably, information gathered from one's quantified home could be used for commercial purposes.

Video Podcasts on TVs
I regularly watch TedTalks, NASACast, and other video podcasts on my computer, but I would rather use my smart TV instead. I know I have to go to each individual podcast channel, or Web feed, to access episodes. Is there an easy way to queue them up chronologically on my smart TV without having to involve my computer each time?

You'll have to involve your computer just once in order to set this up. If you happen to be an unabashed Apple fan and own a Mac, along with an Apple TV, this will be a no-brainer: Just create a smart playlist on iTunes and beam it to your AirPlay-compatible TV.

If you have a different prod-

uct ecosystem, there's a bit more work to do, but a solution does exist. You'll need the following third-party hardware and software: a Roku player; the myPlex cloud-service app, which organizes your personal media; and an account with If This Then That (IFTTT), an automating service, which is where this trick starts.

IFTTT lets you create "recipes," which pull data from one Web app and use it in another when a trigger is tripped. In this case, what you want is to add new videos from an RSS feed to your myPlex queue. A shared recipe for this already exists on ifttt.com and is searchable through the Browse function. (You'll have to join IFTTT first, but signing up is free.)

Open the recipe, enter the URL for the video RSS you're interested in, as well as your dedicated myPlex email address (which is automatically generated by the Plex service), and repeat the process for each subsequent podcast. The idea is that IFTTT "watches" for new RSS items in real time; when an episode gets posted, it's beamed into your playlist using an automated Gmail message.

The one weakness of this hack is that it doesn't grab any previous episodes from your RSS feeds—it scans for new content only, from the moment you set up the system. But that's a small quibble when the rest of your job is to kick back on the couch and wait for new episodes to roll in. **PopMech**



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Send your questions to pmdigitalclinic@hearst.com or over Twitter at @PopMechDigital or to Digital Clinic, Popular Mechanics, 300 W. 57th St., New York, NY 10019-5899. While we can't answer questions individually, problems of general interest will be discussed in the column.



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