



# Easy registration and authorization enforcement

NXP technology facilitates and automates  
authorization processes



NXP introduces an easy registration and authorization enforcement method for electronic-controlled equipment—a process that requires little human interaction, uses low cost electronic parts, and benefits regulatory bodies, businesses and consumers.

### EXAMPLE—THE DRONE REGISTRATION CHALLENGE

As drones proliferate, they have turned from a curiosity into a commodity with beneficial uses, but which in the wrong hands have sometimes created dangerous situations. As a result, the FAA now requires drone owners to register any device weighing more than 0.55 lbs. (250 g). For drones currently in the field, enforcing this new law might be problematic, as it relies on the honor system to some extent. But for new devices, NXP offers an easy enforcement method.



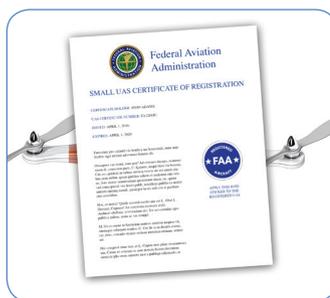
The FAA now requires registration of drones over 0.55 pounds.

### THE DRONE REGISTRATION ENFORCEMENT SOLUTION

NXP's drone registration solution uses low cost NFC technology to easily enforce compliance.



Manufacturers could include an NFC reader within the drone housing. NXP makes this step straightforward by providing reference designs for drop-into-place design ease.



Upon registration, consumers could receive an official government-issued registration certificate that comprises an NXP encrypted NFC tag in adhesive label form.



Upon adhesion to the drone housing, the drone control electronics would wirelessly read the certificate. If valid, the drone microcontroller enables functionality. If not, the drone will not power up.

### BENEFITS TO REGULATORY BODIES AND CITIZENS

Electronic registration provides more than just ease to government regulatory bodies, it also facilitates regulation of that drone to ensure the safety of all citizens.

- ▶ Upon application of the registration certificate sticker, the NFC chip inside the sticker could convey identification information to the drone microcontroller, such as the registration number, model/serial number of the drone, and its zoning classification. Because this information would now be housed with the drone, drone manufacturers could choose to broadcast select details (such as the registration identification number and classification information) via appropriate long-range wireless communication while in flight.
- ▶ If the drone flew within restricted airspace (near airports, sensitive government sites, stadiums, large public events, etc.), flight controllers could obtain the classification information (something virtually impossible to obtain visually) from the drone and thereby verify its authority (or lack thereof) to travel within a particular space, in order to help prevent potential catastrophes.

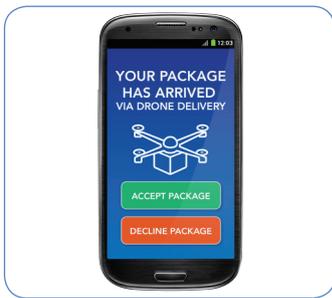


### EXAMPLE—DRONE PACKAGE DELIVERY

Several companies are working on the ability to deliver packages via drone. NXP technology provides a way to confirm that drones are operating within authorized airspace corridors, and then to secure an electronic signature before the drones sets down on the ground.

### DRONE ELECTRONIC SIGNATURE SOLUTION

The NXP electronic signature solution uses NXP Bluetooth Low Energy (BLE) to obtain a valid signature for delivery:



The consumer would receive an electronic package notification via BLE to their mobile device.



The drone hovers over the delivery zone until it obtains the electronic signature.



After receiving the signature, the drone releases the package and returns to the point of origin, or it could travel to a nearby location for a package return.

### BENEFITS TO CONSUMERS, BUSINESSES, AND REGULATORY BODIES

Electronic identification and registration traveling with the drone is beneficial on multiple fronts:

- ▶ For consumers, drone delivery equals rapid, as well as reduced cost, delivery. But, both businesses and consumers need a means to verify parcel receipt. NXP's electronic signature solution is efficient and non-invasive.
- ▶ For businesses, wireless signature confirmation ensures a level of protection of a valuable piece of commercial equipment (the drone), and reduces potential liability for loss due to theft or inaccurate parcel delivery.
- ▶ For regulatory bodies, the electronic identification traveling with the drone helps ensure compliance with flight corridor restrictions, especially if those corridors require dynamic mapping.

## EXTENDED APPLICATIONS

The NXP registration and authorization enforcement method extends beyond just drones. Anything with electronic control could benefit from a similar setup. Other examples include:



### Equipment rental

After paying for the desired rental period, consumers would receive a temporary tag to enable power. The tag would contain an NFC chip that holds rental authorization. An NFC reader within the rental equipment could read the information and enable power only for the terms of the agreement.



### Car enable switch

For car insurance regulation enforcement, rental enablement, those driving under restrictions (e.g., teens or persons convicted of DUIs), valid driver's license requirements, etc., a car could start only upon receiving the appropriate authorization.

## LEARN MORE ABOUT ELECTRONIC CERTIFICATION

- ▶ Via email: [rfid.info@nxp.com](mailto:rfid.info@nxp.com), using "Electronic Certification" in the subject heading.
- ▶ Visit our website: [www.nxp-rfid.com/EC](http://www.nxp-rfid.com/EC)

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