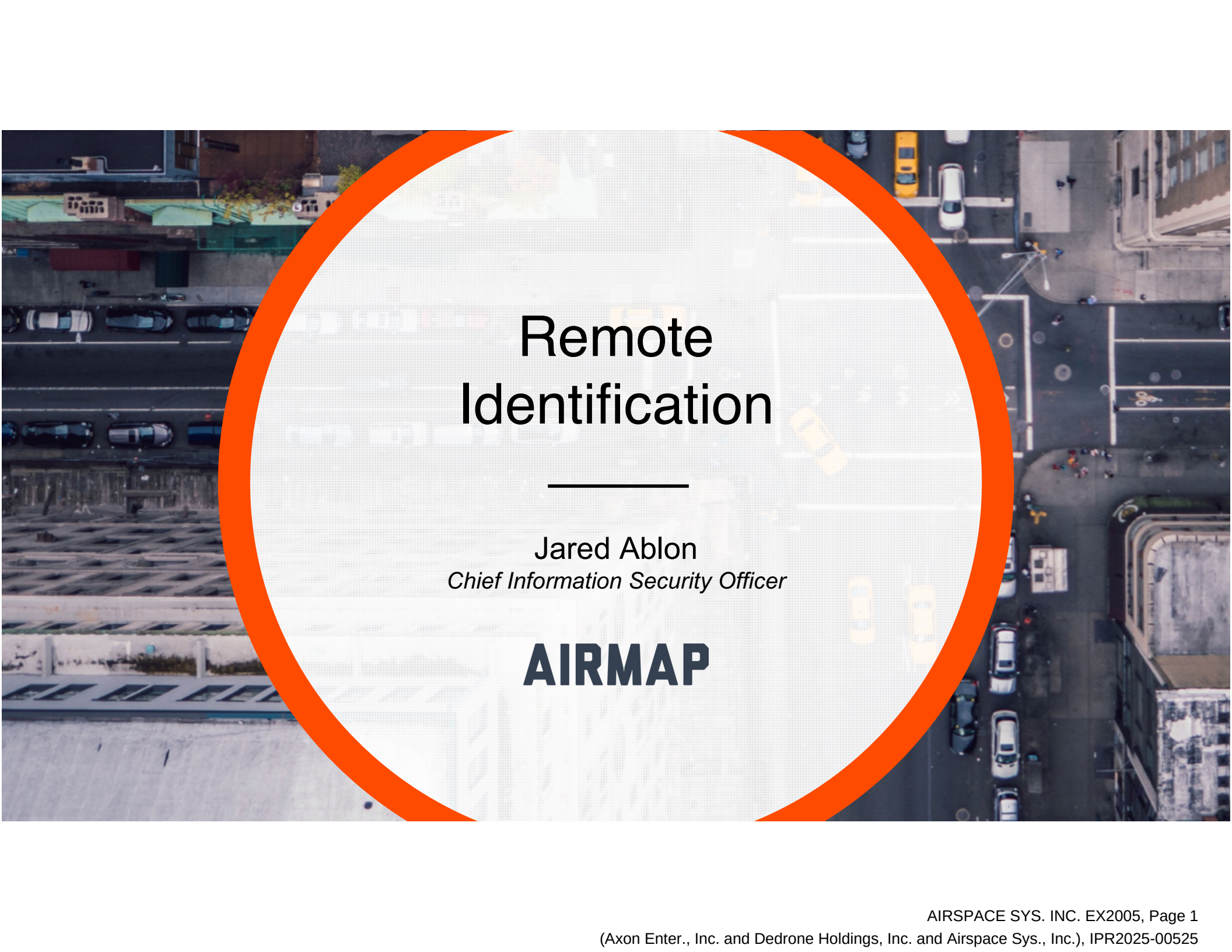
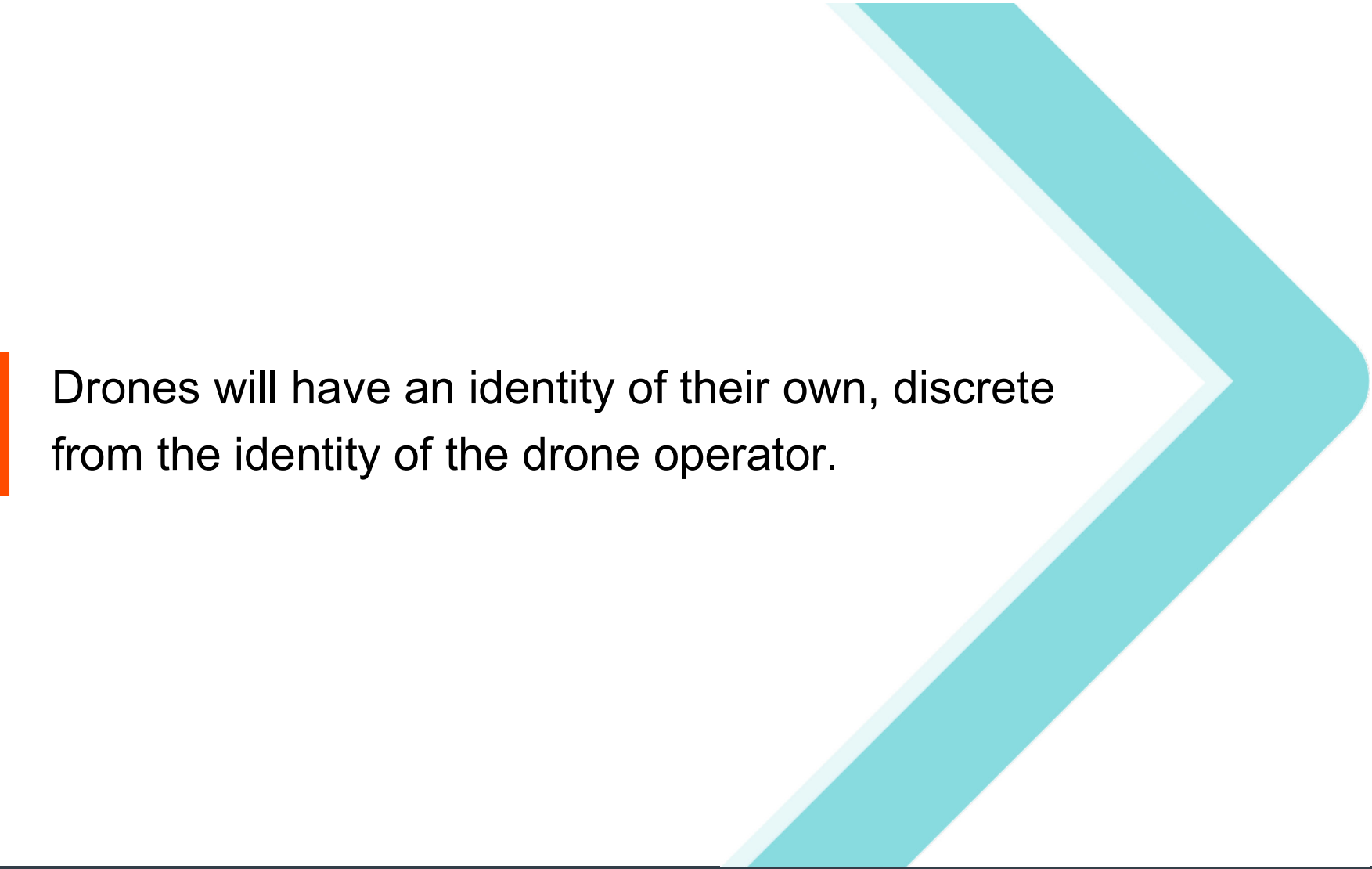




Remote Identification

Jared Ablon
Chief Information Security Officer

AIRMAP



Drones will have an identity of their own, discrete from the identity of the drone operator.

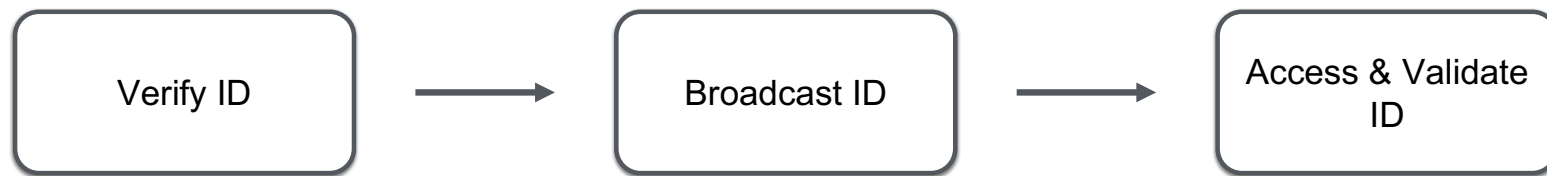
Guiding Principles

Remote identification methods should be:

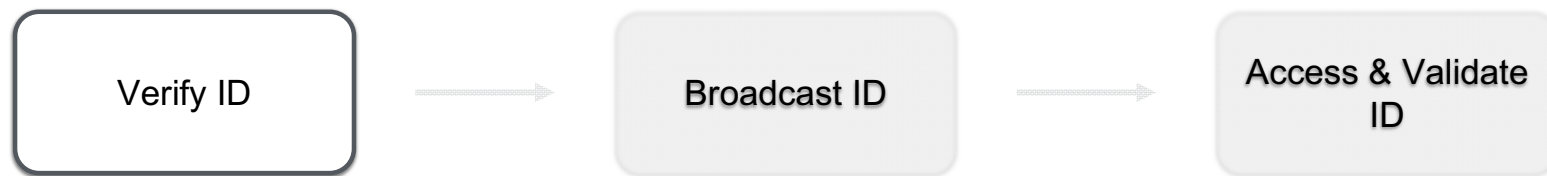
- ✓ Easy for drone manufacturers, developers, and operators to implement
- ✓ Independent of proprietary technologies
- ✓ Trusted, low-cost, secure, and easily scalable



Remote Identification



Remote Identification



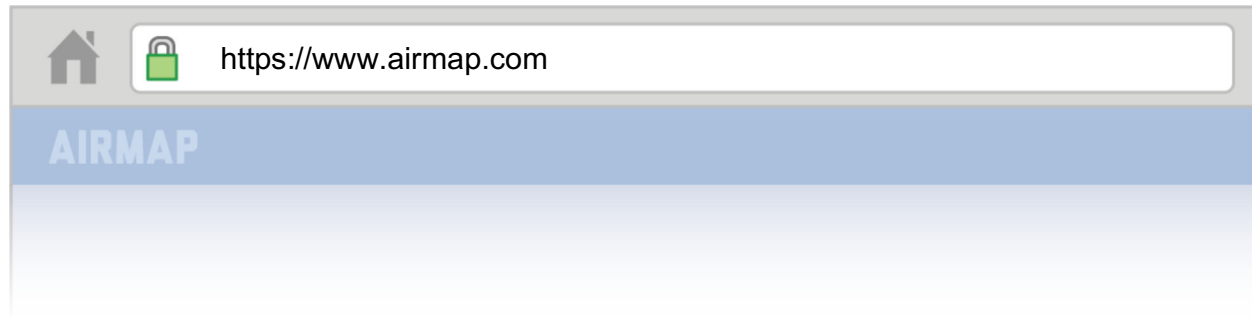
Verify ID



- Certificate Authority **validates** the operator's email address, phone number, name, and address.
- Certificate authority **issues** an PKI certificate for that operator's drone (includes a unique identifying number).
- The certificate includes a fully qualified domain name, known as a **Remote ID URL**, where authorities can access basic information about the registrant (city, state, country).

What are digital certificates?

X509 Certificates (commonly referred to as SSL/TLS certificates) are a digital technology commonly used to secure communications on the internet and in the Internet-of-Things (IoT) ecosystem.



Root Certificate Authority

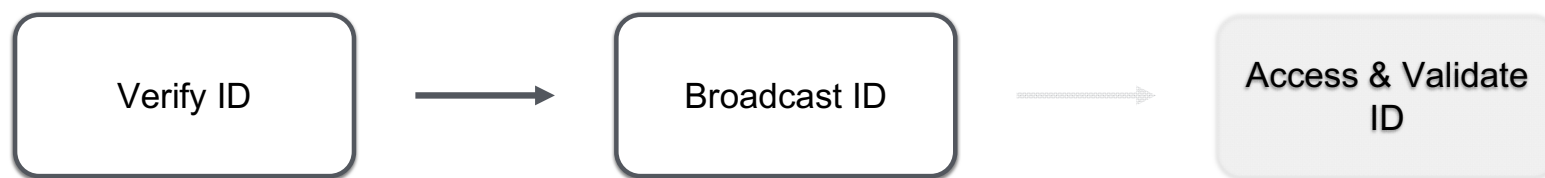


More than 1480 potential providers already in operation.

Certificates are a proven solution for **authenticating** and **securing** financial and other transactions on the internet, and can be leveraged to similarly secure and authenticate drones.

Hardware Security Modules with preloaded private keys can be loaded at the manufacturer.

Remote Identification



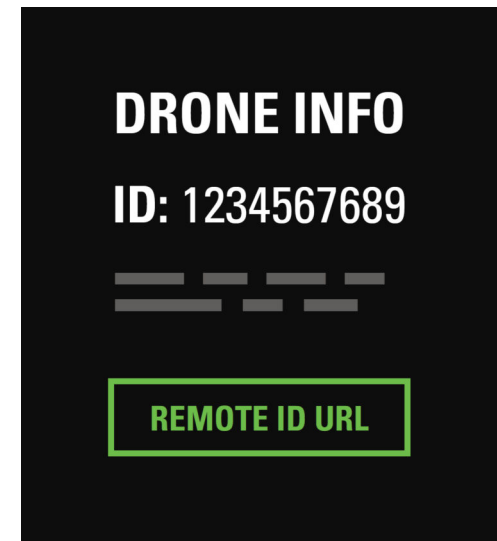
Broadcast Methods

- **ADS-B**
- **Direct Radio Frequency**
- **Networked Cellular**
- **Satellite**

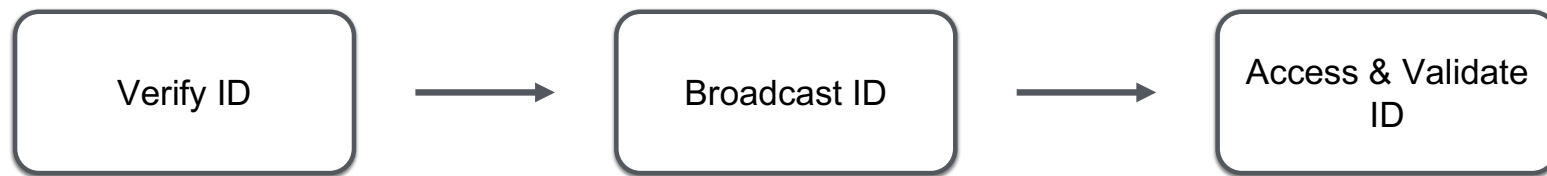
Broadcast

Drone broadcasts a digitally signed **identifying number**, **Remote ID URL**, **location**, and **timestamp** to those on the ground.

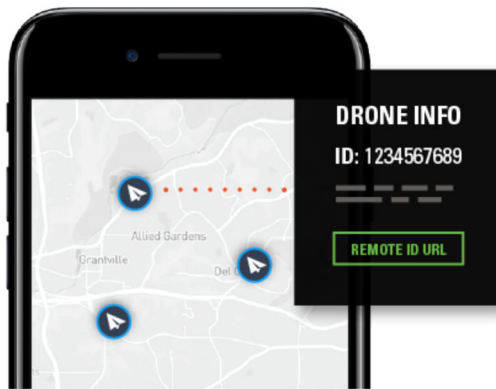
An internet connection, such as LTE, can also be used, but local broadcast allows for data exchange in areas with limited or no data coverage.



Remote Identification

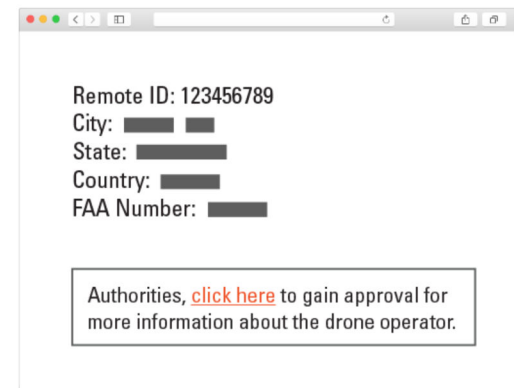


Access

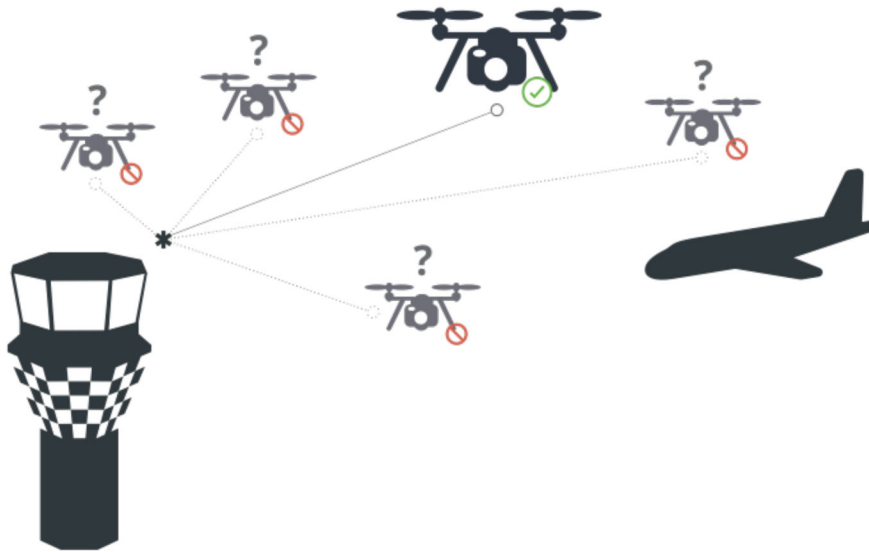


Users may view the drone's ID number and Remote ID URL.

Members of the public can use the drone's ID number to report issues to authorities, but cannot access personally identifying operator details.



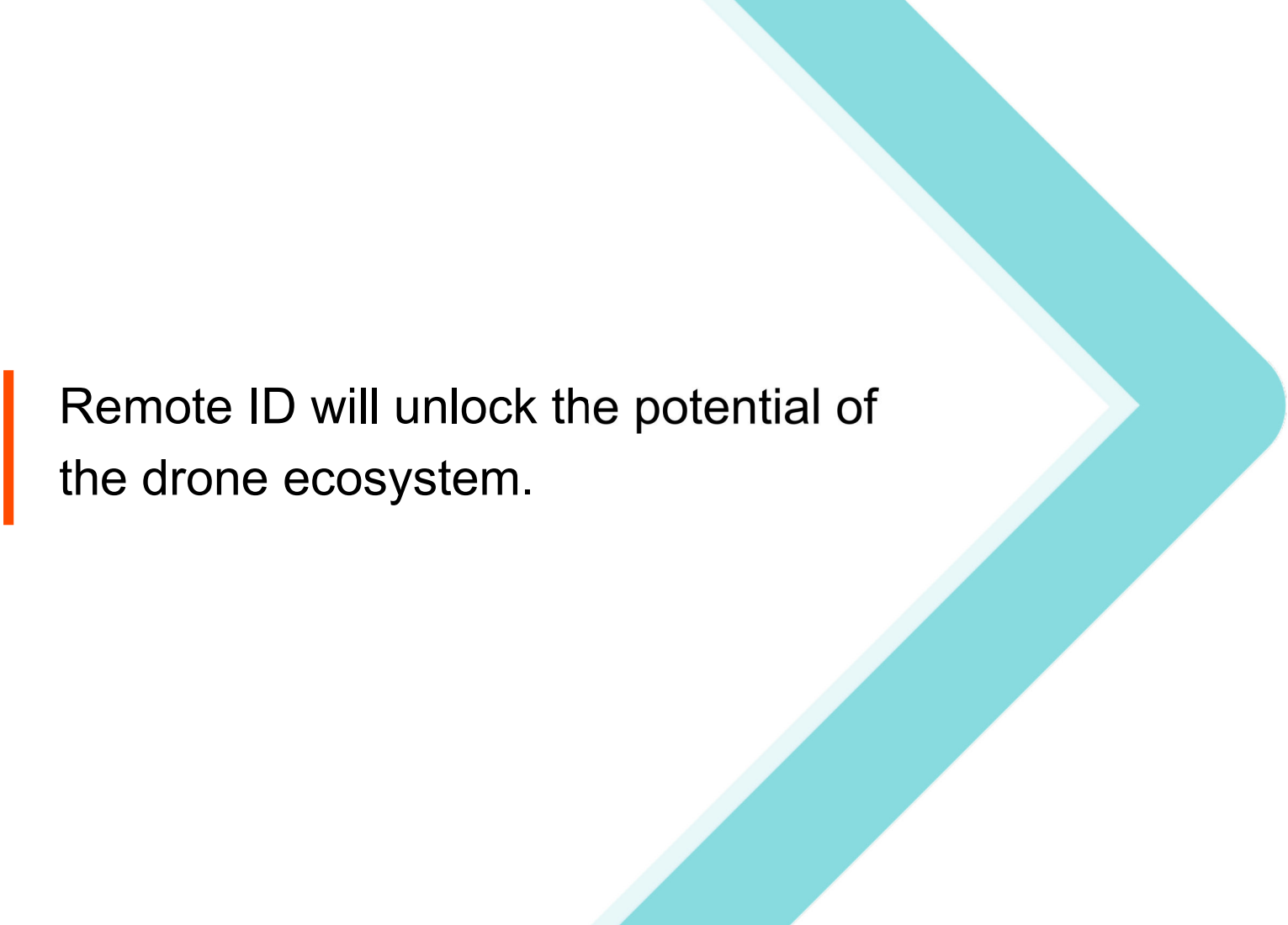
Validate



Assure authenticity and integrity of the identification and broadcast message.

PKI certificates help to ensure that a drone's identity can be **trusted** and has not been spoofed or hacked.

Digital certificates offer a scalable way to identify **millions of drones**.



Remote ID will unlock the potential of
the drone ecosystem.

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