Remote Identification

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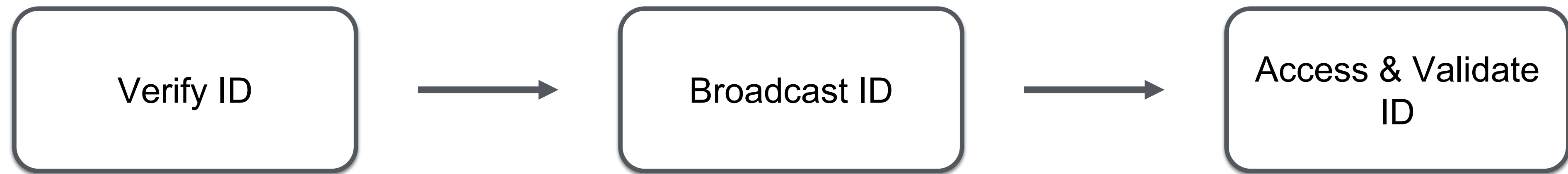
Guiding Principles

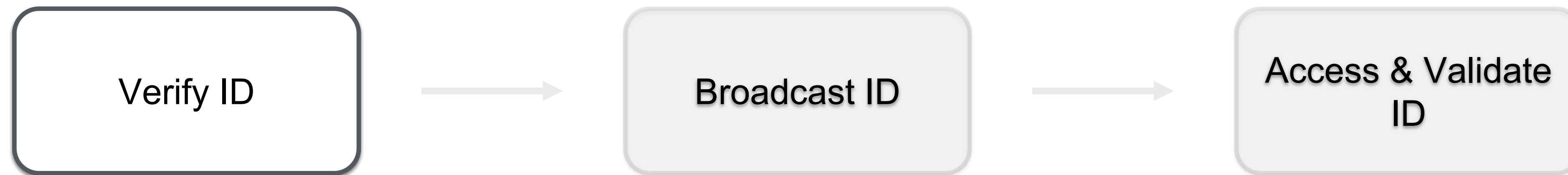Remote identification methods should be:

✓ Easy for drone manufacturers, developers, and operators to implement

✓ Independent of proprietary technologies

✓ Trusted, low-cost, secure, and easily scalable

Remote Identification

Verify ID → Broadcast ID → Access & Validate ID

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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).
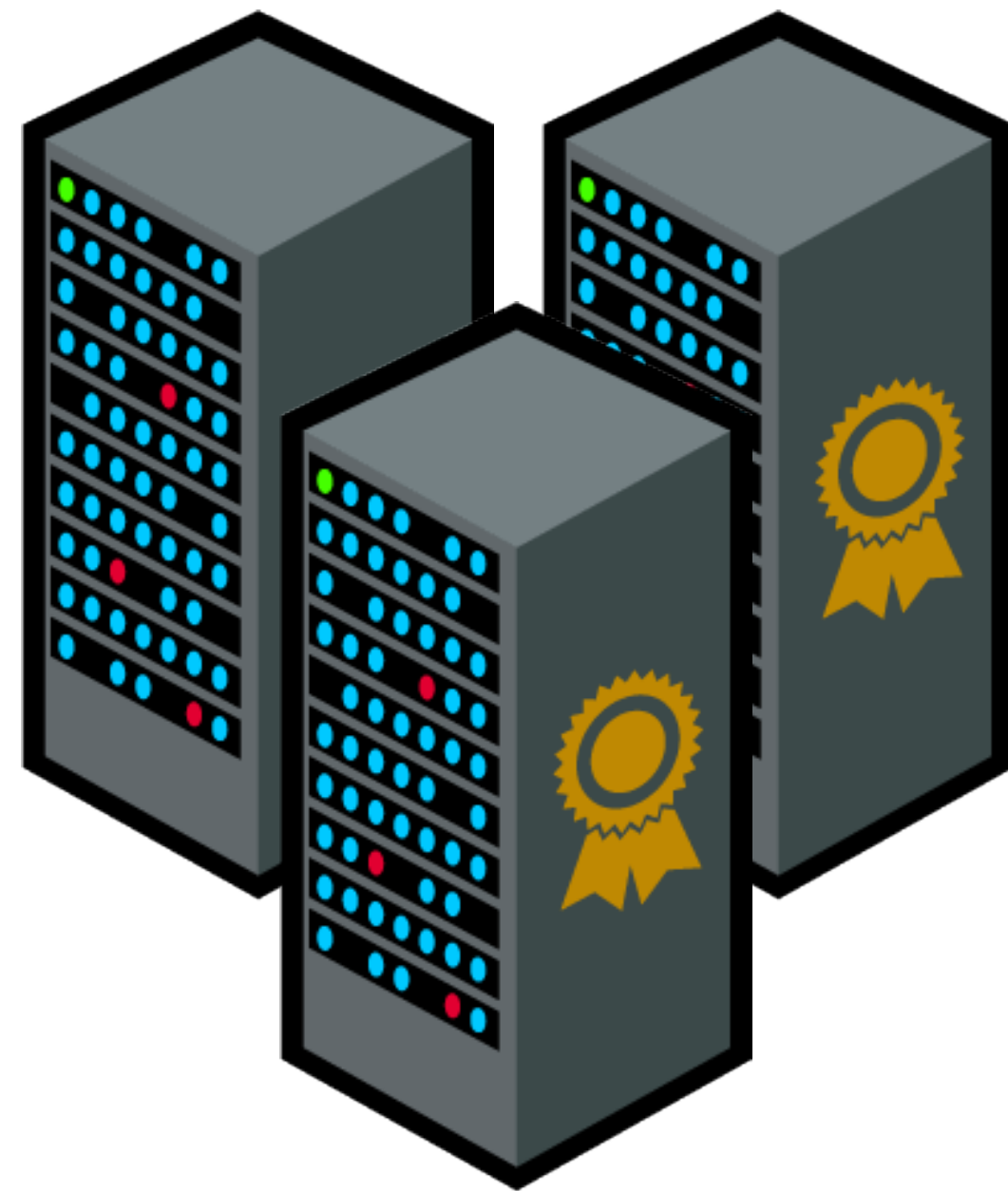
What are digital certificates?

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.

https://www.airmap.com

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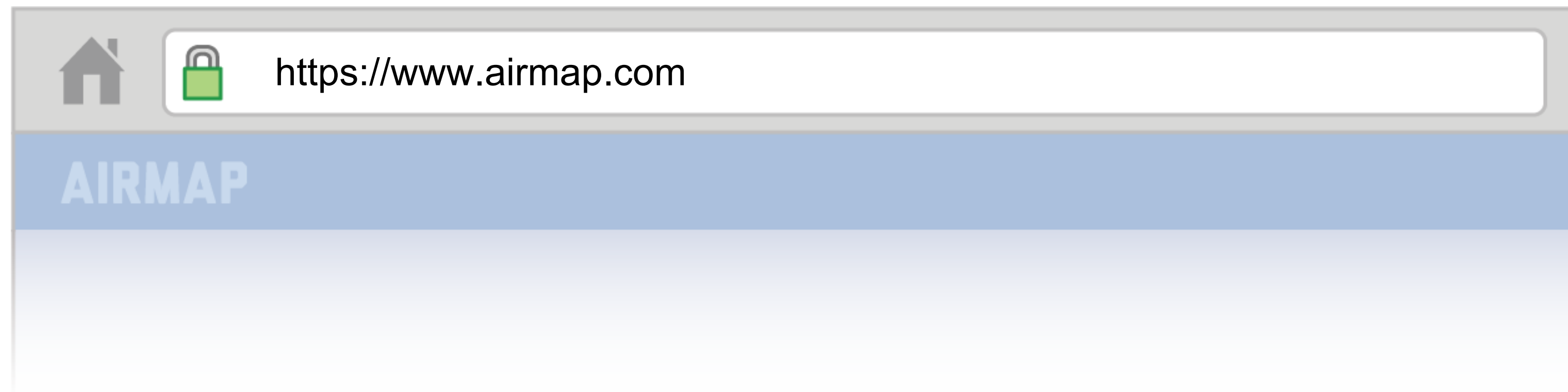
Root Certificate Authority

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

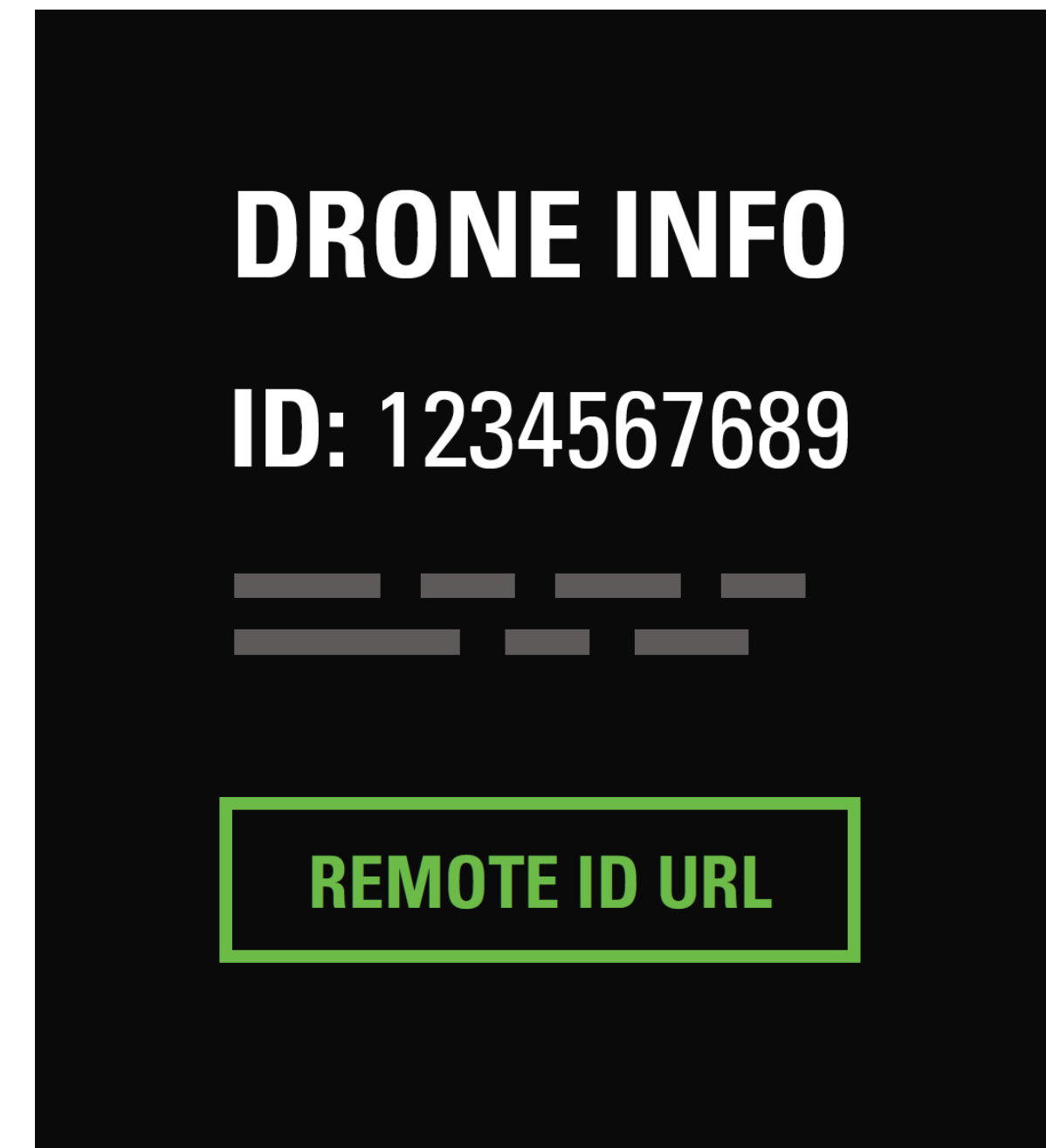Verify ID → Broadcast ID → Access & Validate ID
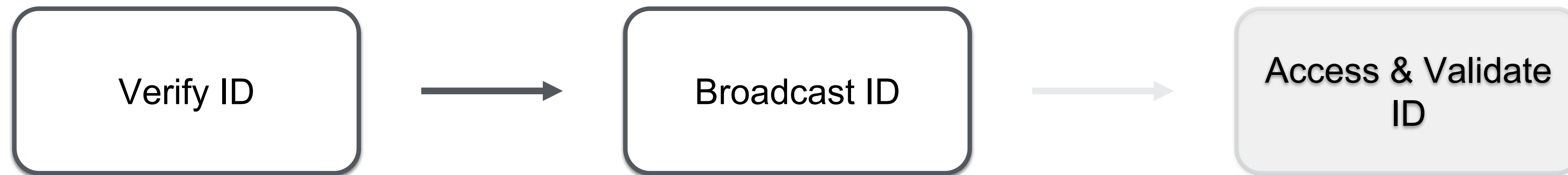
Broadcast Methods

- **ADS-B**

- **Direct Radio Frequency**

- **Networked Cellular**

- **Satellite**

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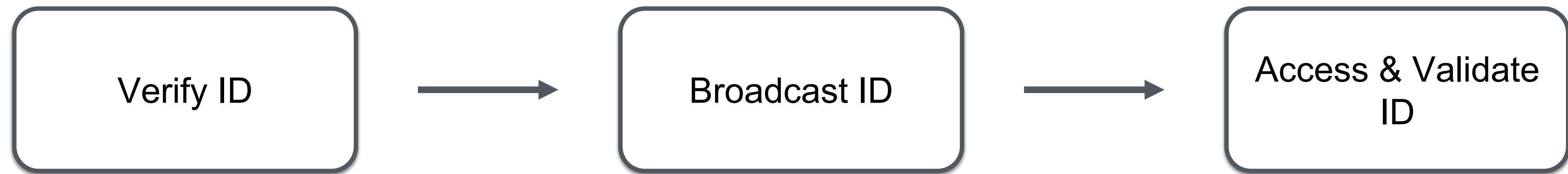
Drone broadcasts a digitally signed identifying number, Remote ID URL, location, and timestamp to those on the ground.

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.
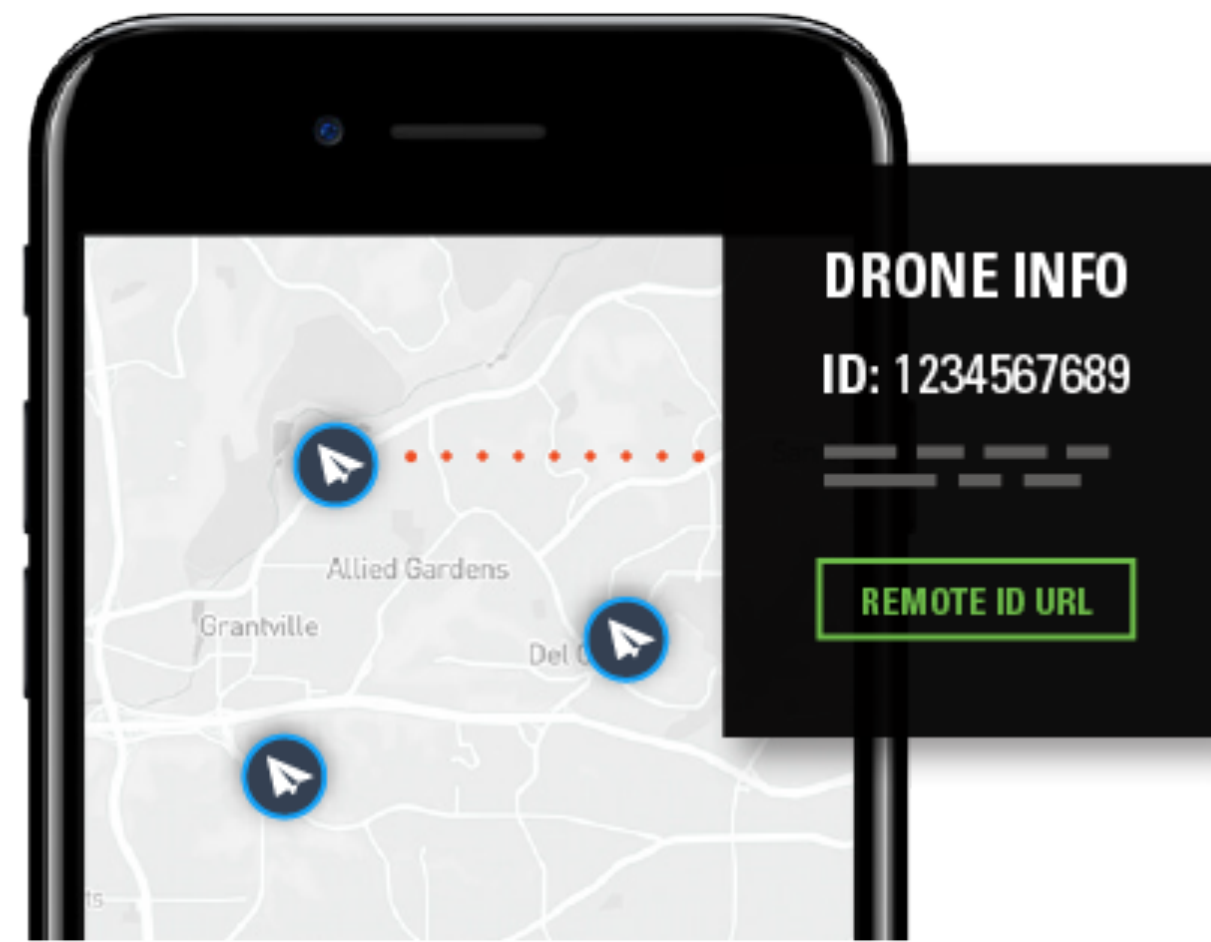
DRONE INFO

ID: 1234567689

REMOTE ID URL

Remote Identification

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┌─────────────┐        ┌─────────────┐        ┌──────────────────┐
│             │        │             │        │                  │
│  Verify ID  │  ───▶  │ Broadcast ID│  ───▶  │ Access & Validate│
│             │        │             │        │        ID        │
│             │        │             │        │                  │
└─────────────┘        └─────────────┘        └──────────────────┘
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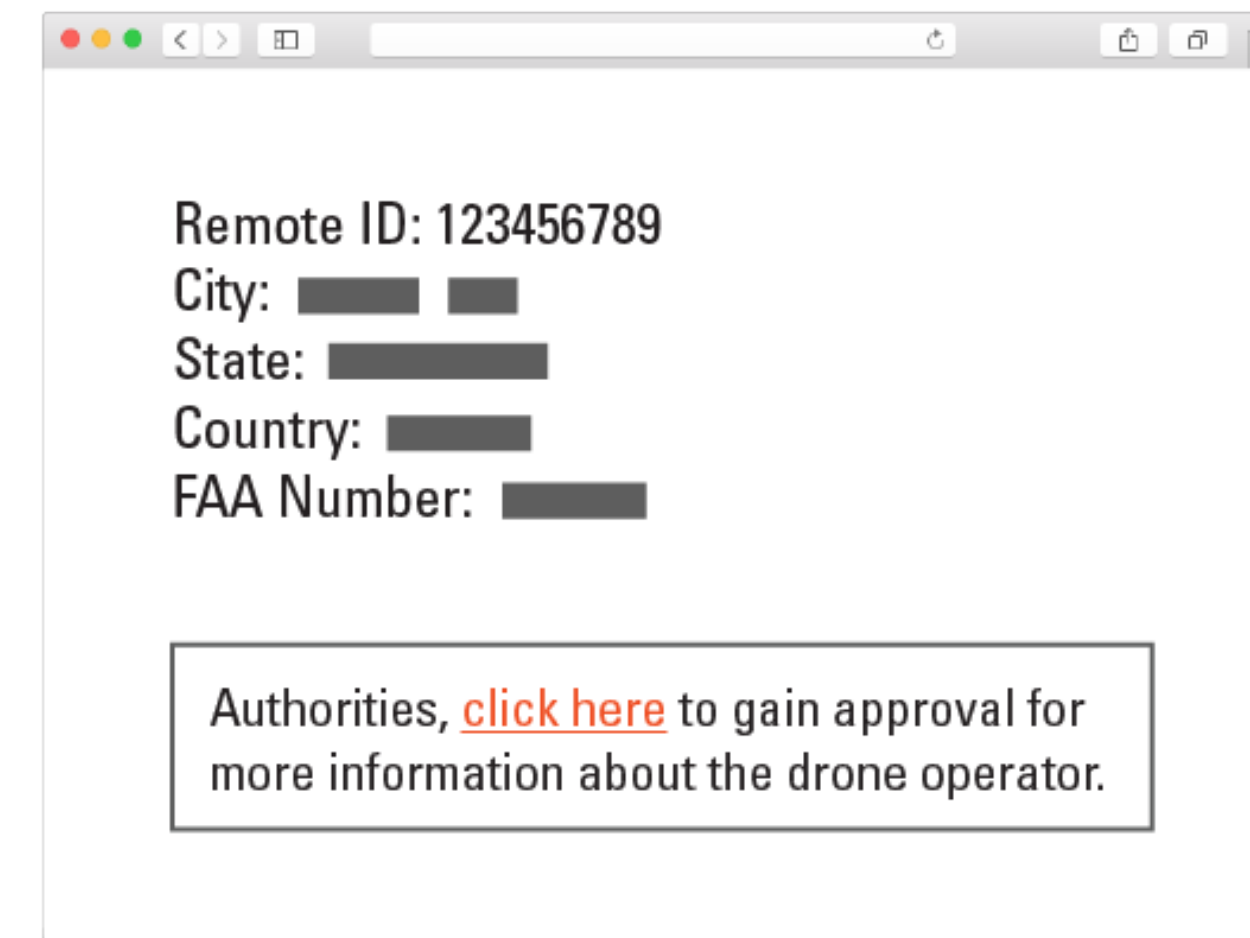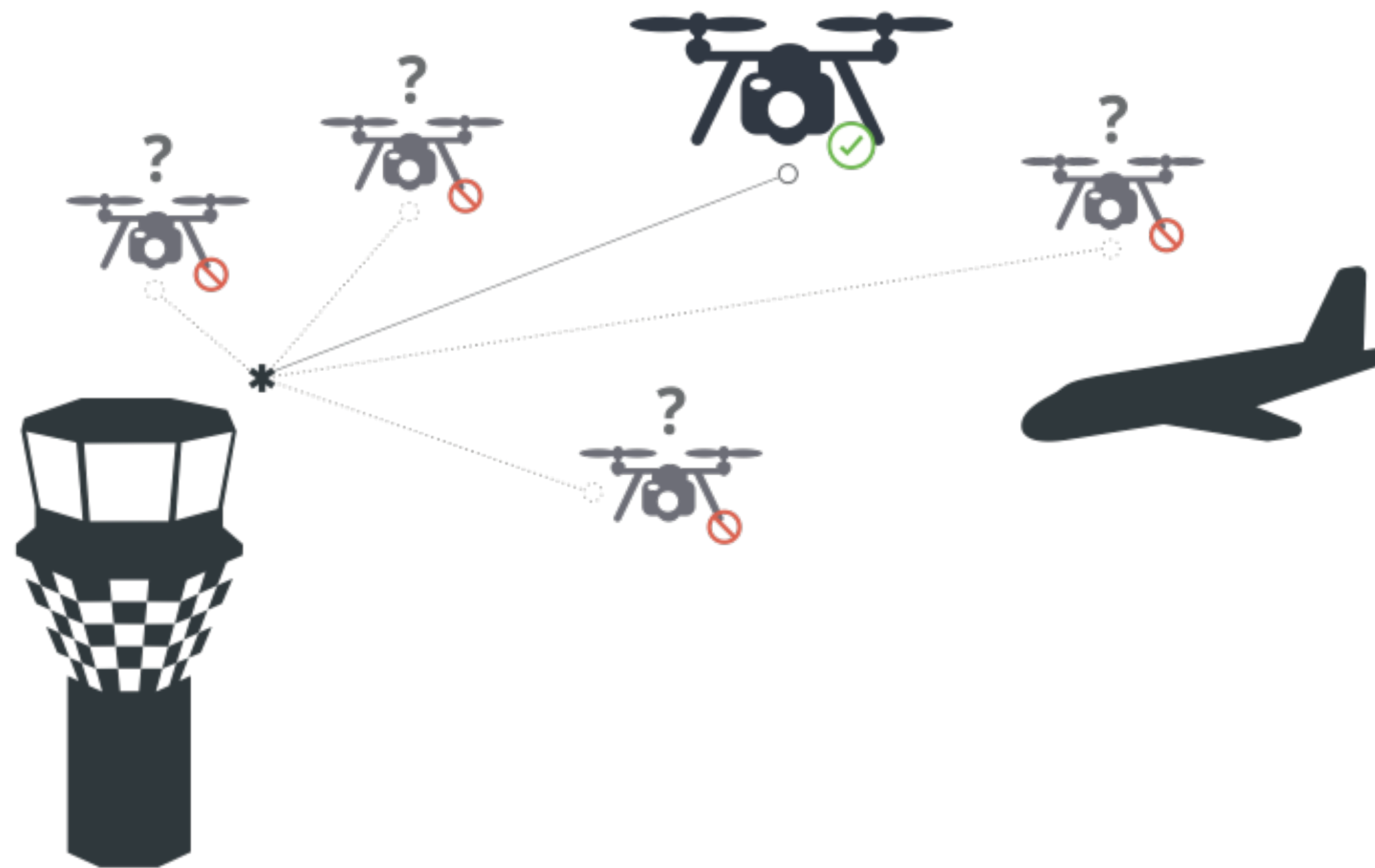
Access

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.
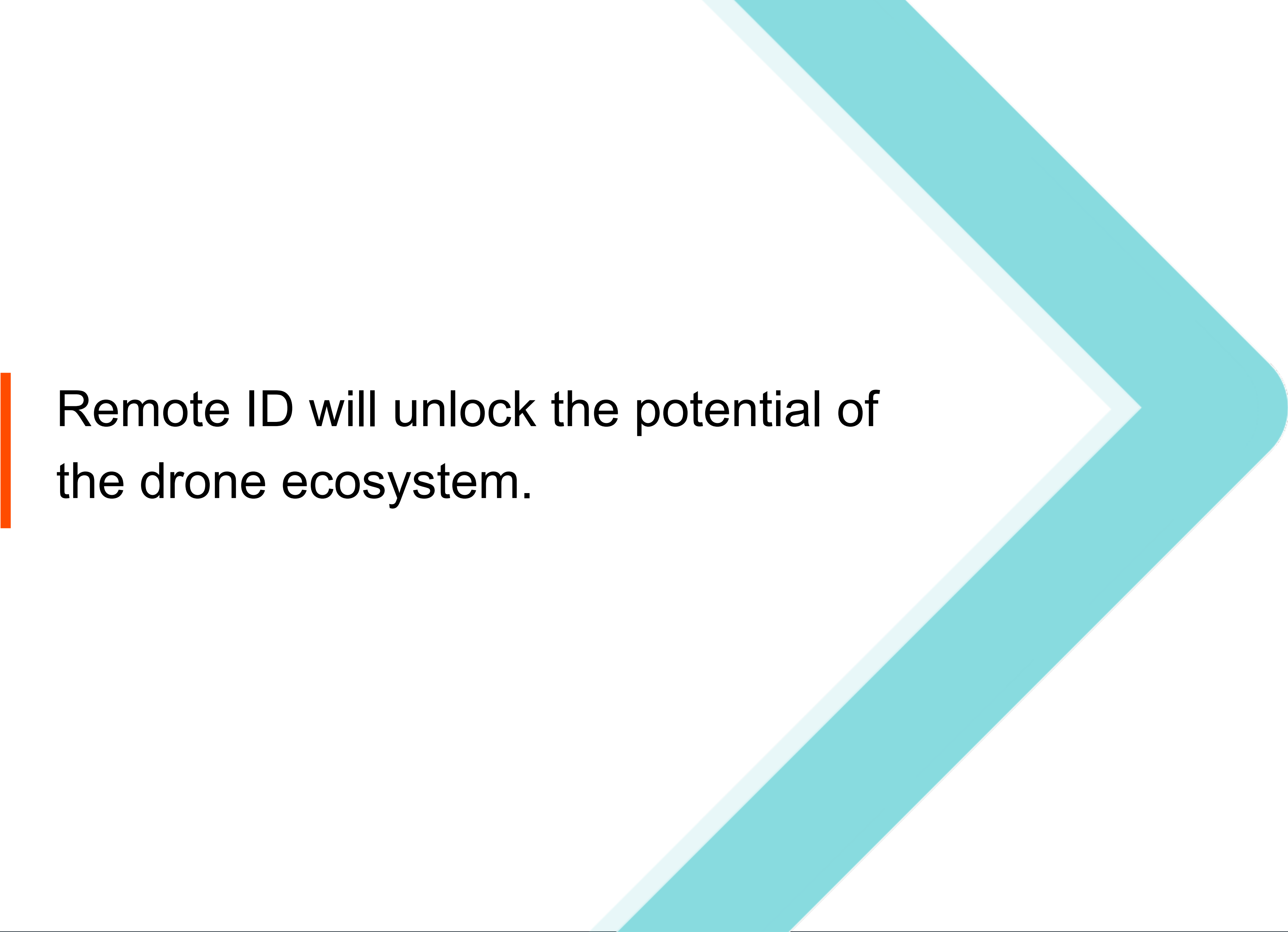
Validate

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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