

ICAO DRONEENABLE/3

AIRMAP

Information Management in the Drone-Age

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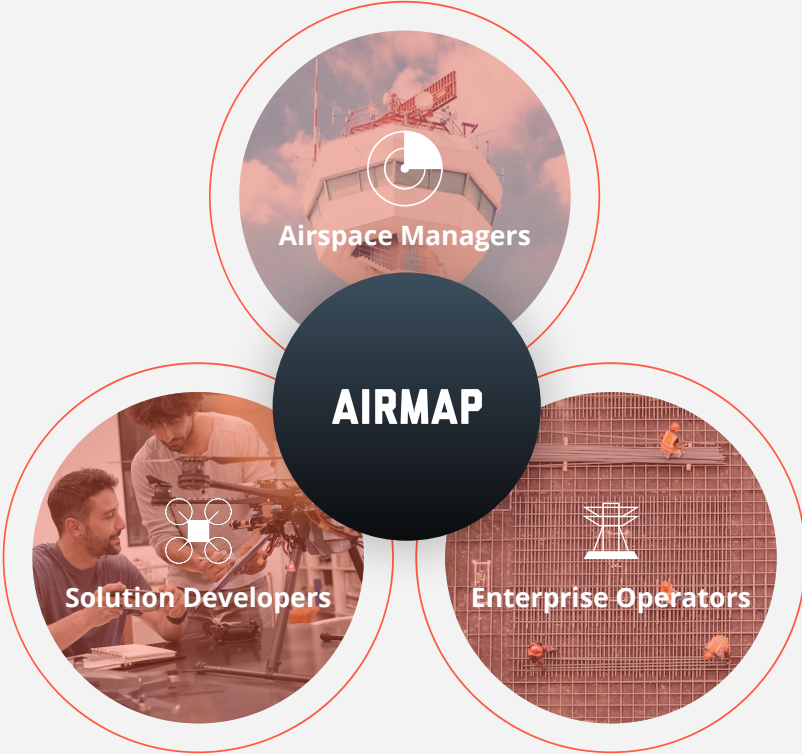


Agenda

- What do USSs do?
- What are the information needs?
- How can we solve this



AirMap automates drone operations and airspace management with mission critical services for Airspace Managers, Enterprise Operators and Solution Developers.



USS today: who are they providing services to?



Airspace Authorities

Awareness Apps

- Airspace Authority Branded Web & Mobile Apps

Registry

- Drones, Operators, Pilots

Flight Information Management System (FIMS)

- Core Profile
- Extended Profile

UTM Center

- Authorization Engine
- UTM Dashboards

Remote ID

- Discovery & Synchronization Service
- Display Service & Apps



Other Authorities

UTM Center

- Access Rights
- Airspace Restrictions

Remote ID

- Access Rights
- Authority Application



Enterprises

Drone Operation Center

- Registrations
- Facility Maps
- Rules Sets & Workflow
- Operations Planning
- Reporting & Archiving
- UTM Dashboards

Drone Automation Workflow

- Automated Flight Plans
- Scheduling & Dispatch
- Flight Execution
- Asset Capture & Storage
- Data Processing & Analytics



Drone Solution Providers

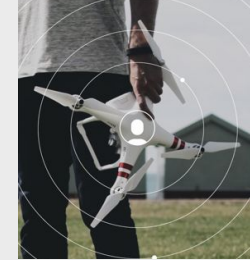
AirMap SDKs

- iOS, Android,

AirMap APIs

- Discover
- Plan
- Fly

Developer Portal



Operators (Pilots)

AirMap Pilot App

AirMap for Drones

Partner Pilot Apps

QGroundControl

AirMap for Drones Pilot Apps

Discover. Connect. Fly.

Registration

- Pilots create a profile with contact information & credentials
- Pilots manage aircraft by name, type, and model
- Pilots view completed and planned drone flights

Discover Your Airspace

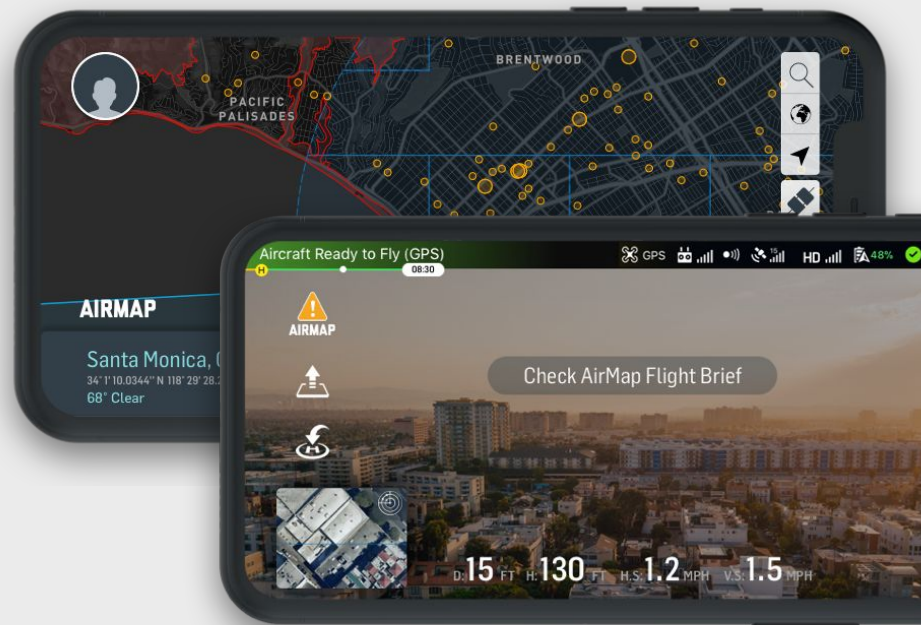
- Pilots get static and dynamic airspace rules pertaining to their flight areas
- Pilots plan flight paths, including details like altitude and duration
- Pilots send notice and / or request authorization in regulated airspaces

Get Compliance Briefing

- Pilots view flight conditions like weather and wind prior to takeoff
- Pilots receive in-app flight briefing to review and confirm compliance with airspace rules and advisories
- Pilots submits flight

Get Traffic Alerts

- Pilot flies drone directly from AirMap App with seamless connection to UTM platform
- Pilot receives in-flight traffic alerts of nearby aircraft
- Pilot gets real-time notifications about changes of airspace



The Real Problem

03 Sep 2019 | 20:44 GMT

It Shouldn't Be This Hard to Responsibly Fly a Drone

The FAA's app that tells you where you can and can't fly your drone ignores both local and national regulations

By Evan Ackerman



Photo: Stark Ackerman

Can I fly here? You probably shouldn't rely on FAA's B4UFLY app to decide.

"Additionally, there may be local laws or ordinances about flying unmanned aircraft affecting your intended flight that are not reflected in this app. It is the responsibility of the operator to know the rules and fly safely at all times."

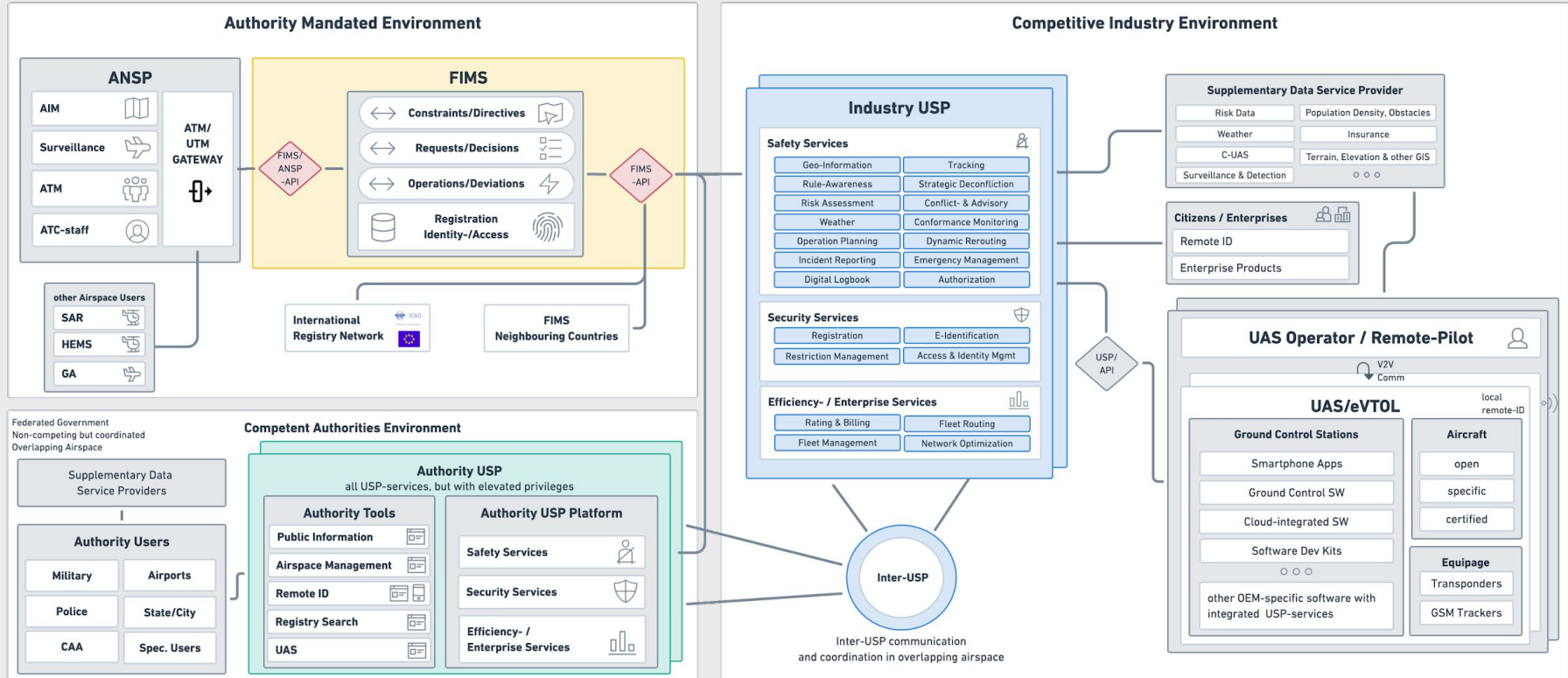
We asked the FAA for comment on this, and the agency sent us the following statement:

The B4UFLY app provides information regarding airspace access for recreational drone flyers. It provides land use information for take offs and landings for National Park Service lands, but it does not provide information regarding take offs and landings are allowed on other federal, state, and locally managed lands and parks. Operators are expected to make themselves aware of any additional land use or police restrictions that may exist in the area where they wish to fly.

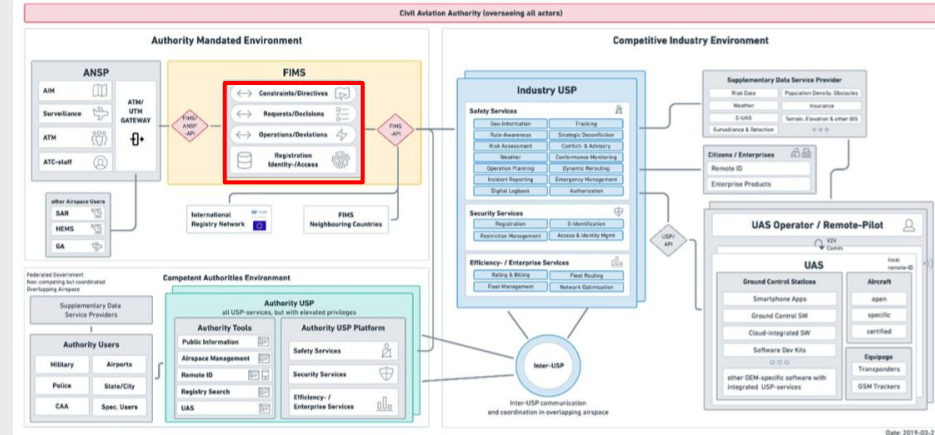
What the FAA is saying, I think, is that the B4UFLY app provides information about *airspace*, which is all that the FAA is allowed to regulate. The FAA can't regulate anything on the ground, which is where most other drone regulations come in—when a city or state says “you can't fly drones here,” what they're actually saying is, “you can't take off or land a drone from here because we own this land.”

Swiss U-space : Notional Architecture in ConOps 1.0

Civil Aviation Authority (overseeing all actors)



Basic Principles of FIMS



Gateway for Data Exchange

Exchange of Data between U-Space participants and ATM systems and vice-versa.

Access Point for Information





Competent authorities use this gateway as an access point for information on drone operations (as required) and are informed about any situations that could have an impact on the national airspace.

Centrally managed

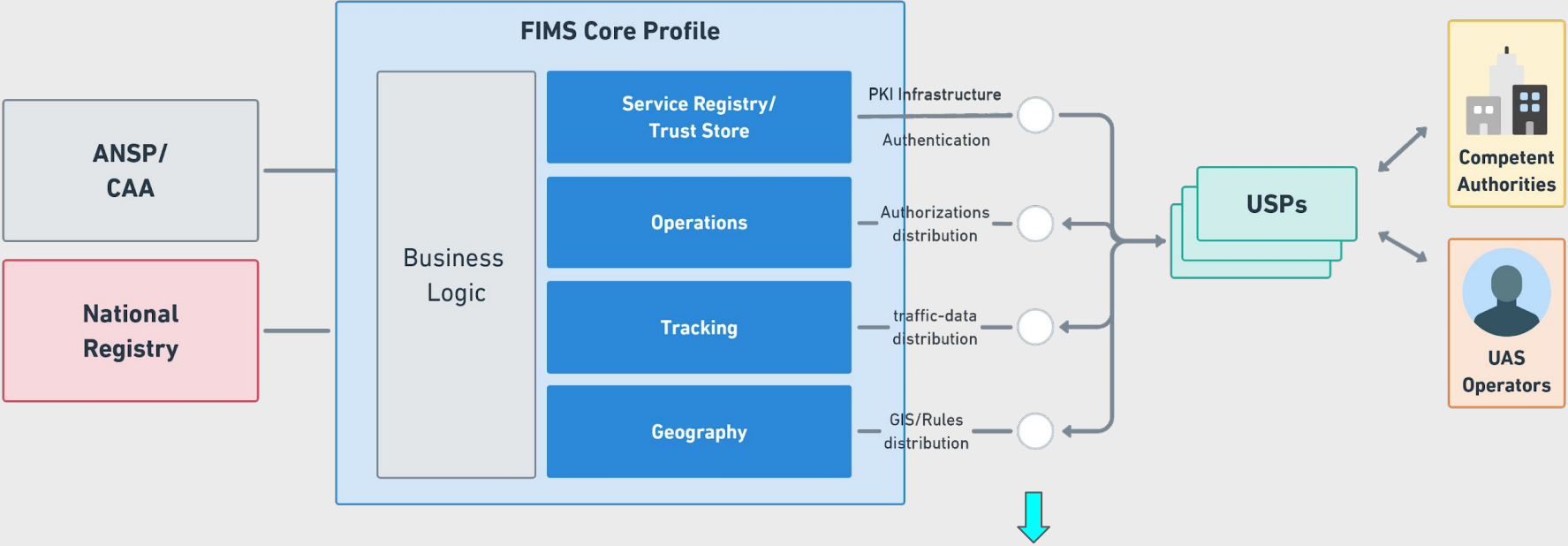
The FIMS is the UTM/U-Space component that will be built and managed centrally to support U-Space operations.

This is because of the centralized nature of the function it provides.

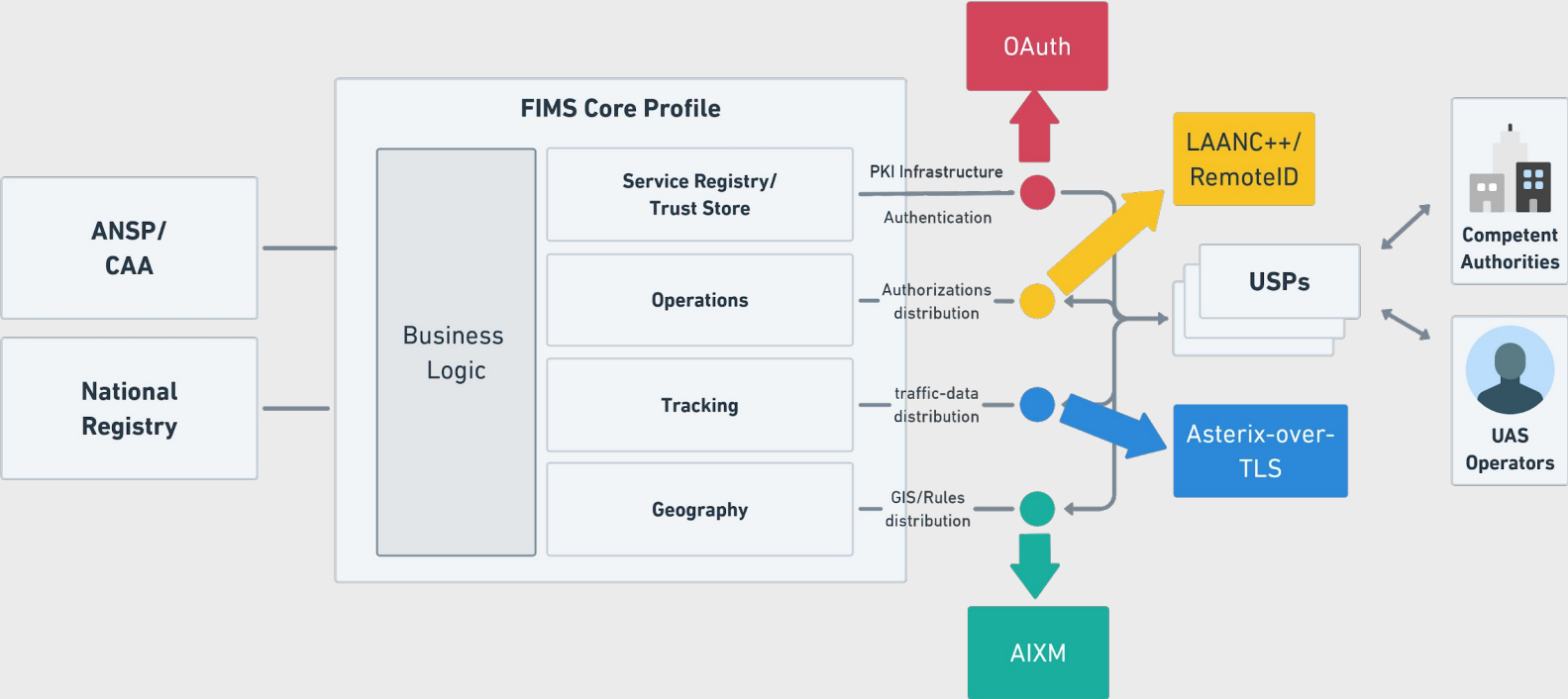
Only 4 functions, performed only by the FIMS, while refraining from additional functions

-  **To centralize, consolidate and allocate static and dynamic airspace to and from relevant stakeholders.**
-  **To exchange relevant information with other neighbouring ANSPs.**
-  **To exchange UTM/U-Space information with ATM and other relevant stakeholders when required.**
-  **To centralize and consolidate registration information from USSs in accordance with applicable rules and regulations**

FIMS High Level Technical Overview



FIMS High Level Technical Overview



Conclusion



USS need digital data

USS need a lot of authoritative data to provide services in accordance with the law.

Data should be made available digitally.



Multi-Authority is complex

UTM needs data from several stakeholders.

It can be very dynamic, and the environment needs mechanisms for centralized oversight.



FIMS as an enabler

FIMS can be defined as the central distribution point for data and rules.

It enables a competitive USSs market while providing centralized oversight mechanisms.



Onwards

Switzerland is implementing FIMS, a few tenders have been noted.

More advanced features lead to a “Extended-FIMS”, which might be suitable for some markets as well.

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