

ICAO RPAS/3 SYMPOSIUM

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INTEGRATION PLANS – issues to be addressed when integrating RPAS into the ATM system

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Drones: curse or blessing?

Risks

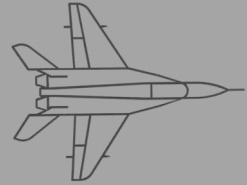
- Safety
 - Safe integration of drones in Swiss airspace;
 - Prevention of collisions between drones and between drones and manned aircraft;
 - Protection of third parties on the ground.
- Security
 - Misuse of drones for unlawful purposes
 - Cybersecurity: prevent unlawful manipulation of drones
- Privacy
 - Preserve privacy of third parties on the ground

Opportunities

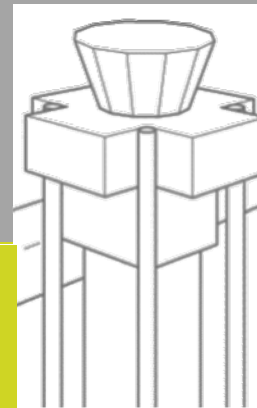
- Laboratory value
 - The U-Space can act as a powerful laboratory to test functionalities that are too difficult to validate in the ATM environment
- Business opportunities
 - Opportunity for ANSPs to expand their activities



High Altitude UAS

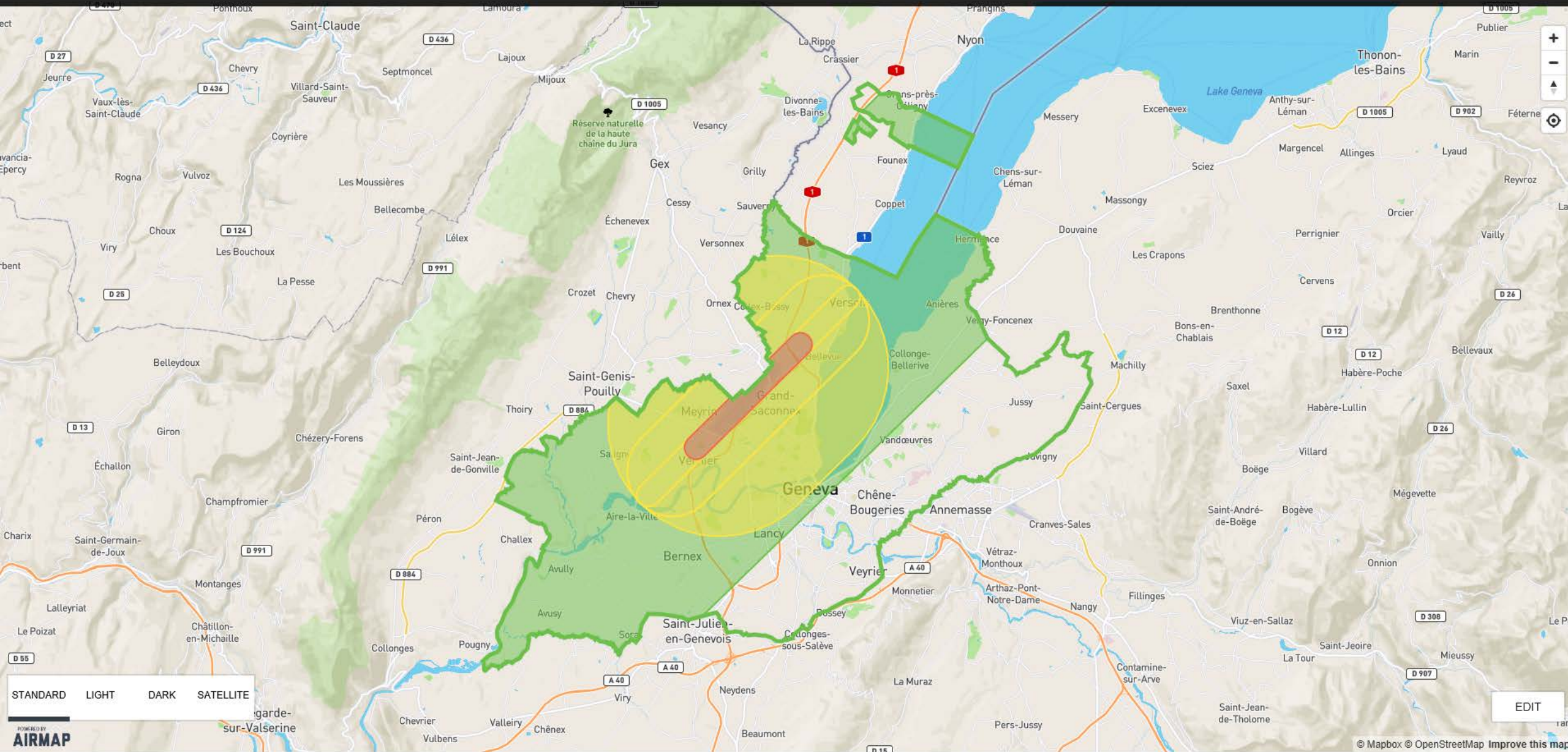


Shared manned /
unmanned aviation



UTM





Map navigation controls including zoom in (+), zoom out (-), home (house icon), and location (target icon) buttons.

Map style selection buttons: STANDARD (selected), LIGHT, DARK, and SATELLITE.

EDIT

A clash of cultures

• ATM

- Sovereignty
- Structured safety
- National boundaries
- Public service minded
- Conservative
- Complex
- Human centric
- Monopoly

• UTM

- Business minded
- Innovative
- Technology and automation centric
- Fast moving
- Pragmatic
- Competitive

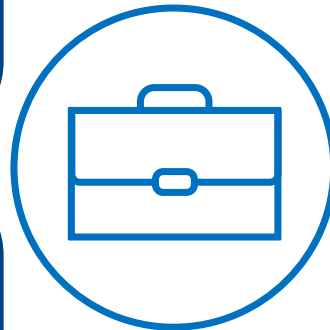
A reference model for a UAS Traffic Management (UTM)

Functions

- Registry
- Airspace management
- Flight planning
- Navigation
- Detection and separation
- Geo-Fencing

Infrastructures

- No need for new dedicated infrastructures
- Mobile telephony network
- Existing air navigation equipment
- Dedicated drones applications



U-Services

- Airspace management
- Registration
- Interface management

Stakeholders

- Regulatory/supervisory authority
- Authorities (police, military, ANSPs, etc.)
- Drone operators
- Drone manufacturers
- Infrastructure operators
- Application developers
- U-services providers



14 September 2017 in Geneva:
Successful U-Space demonstrator

Conclusions

- The urgent need for a robust regulatory framework
 - While a large number of open questions remain, there are enough elements to elaborate the foundation of that framework
 - The regulatory framework must be light, focused and flexible, to adapt to the rapid developments that characterise the unmanned aviation industry
- Technology as a substitute for hard regulation
 - If the technology is right, then regulation is light
- The value of UTM as a laboratory for future ATM functionalities
- The need to address the cultural dimension