Country Summary

Malawi

The Problem

Malawi is a leader in the drone space. There are many operators and use cases and the Government recognises the potential for exponential growth over the coming years so there is an emphasis on how to separate air traffic to enable the scale up of drone use. The coordinated use of airspace in Malawi may be simpler than for other CAAs as, unlike in many other countries, Malawi has an integrated system for drones and manned aircraft, both are managed by air traffic control (ATC). Currently, approximately 70% of Malawi's airspace is a controlled zone.

A key objective for Malawi's Department of Civil Aviation Authority (MDCA) is to ensure regulations and processes are fit for scale, to accommodate many thousands of users. The existing UTM system is available only to a few operators, it enables registration and logging of flight plans but is not well used. The lack of regulations mandating operators use the system enables low uptake of the system. A priority for Malawi therefore is also to finalise drafting of the regulations, incorporating envisioned UTM modules and tracking solutions.

Solution

Malawi's initial hypothesis, developed in June 2023, was:

If we identify a stable, cost effective live tracking solutions that can be integrated into the existing UTM,

then we will be able to see who is flying where, when,

which means that we will improve safety and enable more operators to engage in drone operations.

Early in the process, MDCA identified some clear and specific needs for their UTM:

1. Suitability for emergency response. In other words, a system that would be residence in response to events:

    a. Contingencies in the event of power outages compatible with context – low power & processing requirements; powerful computing needs;

    b. A direct connection in particular zones e.g. those vulnerable to climate events (stable connection for live data, power)

    c. Live data; UTM system but doesn't integrate live data; in emergency lots of air traffic and better coordination is needed; search & rescue – helicopters are also flying at low altitudes

2. Cost efficient for operators
3. Feasible for CAA e.g. cost to establish and operate, equipment needed and it's compatibility with the context.
4. Key Functions

    a. Easy to analyse data output e.g. reports of incidents, near misses etc.

    b. Visualisation of live drone positions (could be based on flights, live data or a combination)

    c. Future potential to identify issues / collisions automatically and alert ATC to take corrective actions.

    d. Visualise no fly zones
5. Integrate the interfaces of the manned and unmanned systems

The team also identified key principles for how they wished to move forward: technology solutions accompanied by policies and processes (e.g. what action will be taken in response to data visualised by the UTM?); learning from what works for the aviation industry and tailoring to the needs of the drone industry; and engaging with stakeholders, including UTC. Malawi set out a bold intention to roll out the UTM and accompanying regulations to all commercial operators in one to two years.

Key activities and decisions

The MCAA have been progressing tracking as a new component of their UTM, in addition to reviewing the current UTM system and whether it adequately meets current and anticipated future needs, specifically the growth in operations and number of flights.

They are currently testing Openskies, an open UTM that is supported by a community of contributors and managed by Openskies Aerial Technology Limited. The system (current system is written in Python and JavaScript. Nodejs). It processes GeoJSON, ASTM compliant operational intents and ED-269 format Geozones and ASTM compliant network / broadcast remote ID. MCAA are in the early stages of testing this solution while they also investigate the feasibility of building an in-house solution, inspired by the success of Cote d'Ivoire.

Outcome and Next Steps

MDCA expect to have finalised the regulations, incorporating feedback from stakeholders where feasible, by March 2024. This exercise is now being led by the recently appointed drone lead in the CAA.