**Service requirements**

**LIFT pilot project for drone-based postal delivery and middle-mile connectivity in Fiji**

## 1 Introduction and background

### *1.1 Project overview*

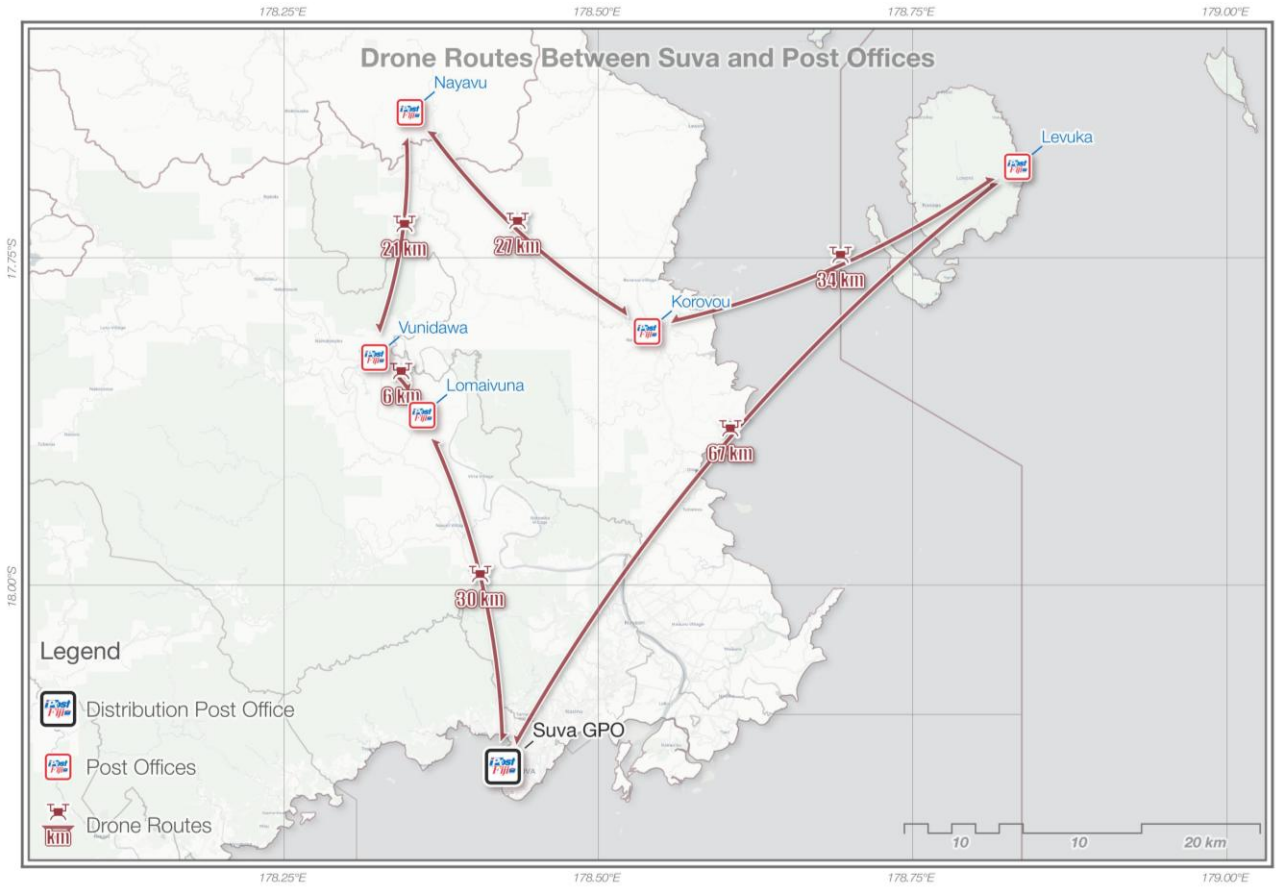
The UPU, as part of a project entitled “Last-mile innovation through flight technology” (LIFT), seeks to engage a qualified drone technology provider to plan, deploy and operate a postal drone delivery pilot project in Fiji in partnership with Post Fiji, Fiji’s designated operator.

### *1.2 Objective*

The purpose of the pilot project is to demonstrate the operational viability of drone-based middle- and last-mile delivery in the Suva region, connecting five local post offices with the General Post Office (GPO) in Suva (see figure 1).

This pilot project will generate data and insights to inform the potential expansion of drone logistics throughout Fiji’s postal network.

*Figure 1 – Illustration of potential route for the pilot project*




The route depicted in figure 1 is for illustrative purposes only; the final routeing will be determined by the Vendor and must include all designated points listed in table 1.

### *1.3 Contract model*

The contract model shall be “drone as a service”. The Vendor will own, operate and maintain the entire drone fleet and associated systems. Post Fiji will provide ground infrastructure, postal staff for cargo loading, unloading and battery change/drone refuelling, if necessary, and site access.

## 2 Operational area and route description

### *2.1 Area of operations*

– Country: Fiji

– Primary region: Suva

– Origin hub: GPO, Suva

– Route configuration: multi-destination delivery loop covering five post offices

### *2.2 Route details*

The route forms a loop originating and terminating at the GPO in Suva, with the following stops:

*Table 1 – Locations of all post offices to be included on the pilot project route*

| *Post office* | *Latitude* | *Longitude* |
|---|---|---|
| Suva | -18.116807 | 178.477326 |
| Levuka | -17.680551 | 178.833457 |
| Korovou | -17.806337 | 178.538793 |
| Nayavu | -17.638949 | 178.350055 |
| Vunidawa | -17.826202 | 178.321843 |
| Lomaivuna | -17.870227 | 178.359814 |

If all relevant permissions cannot be obtained from the Civil Aviation Authority of Fiji (CAAF) and other relevant authorities, the Vendor will be obliged to propose an alternative route corresponding as far as possible with the project objectives.

### *2.3 Characteristics of the terrain*

The profile of the terrain to be covered varies; some parts of the route are over low hills (up to 200 m above mean sea level), the majority is over a plateau and two legs are over water.

### *2.4 Airspace considerations*

Some routes may cross restricted or excluded airspace zones; the Vendor must plan routes to avoid these zones or obtain clearance for them from the CAAF.

## 3 Drone platform technical requirements

### *3.1 Drone technical specification*

The selected drone platform must meet or exceed the following minimum technical specifications:

| *Parameter* | *Minimum requirements* |
|---|---|
| Aircraft type | VTOL[1] or multirotor |
| Propulsion type | All types |
| Cargo release | On-ground cargo loading and unloading |
| Payload capacity | Minimum 20 kg |
| Cargo volume | Minimum 0.1 $m^3$ |
| Maximum take-off weight | Up to 150 kg |
| Range | Minimum 80 km (single charge/fuel load) |
| Endurance | Sufficient to fly a minimum distance of 80 km |
| Wind resistance | Preferably resistant to gusts up to 12 m/s |
| Operating temperature | Temperatures in Fiji are 22–31°C all year round |
| Landing pad requirement | To be specified by the Vendor |
| Navigation | Minimum:<br>– GPS/GNSS[2]<br>– RTK[3], VIO[4] or other positioning system<br>– Cameras and vision processing<br>– Downward LiDAR[5]/landing cameras/rangefinder |
| Communication | Minimum:<br>– Radio<br>– Cellular 4G/5G<br>– Preferably also satellite link |
| Safety systems | Minimum:<br>– Live tracking (Spidertracks or equivalent) – ADS-B[6] is undesirable<br>– Ballistic or emergency recovery solution, such as parachute or equivalent |
| Certification | The drone must be certified by an ICAO member state, proven and operationally mature. Proof of drone platform certification must be provided as part of the tender. |

[1] Vertical take-off and landing.
[2] Global Positioning System/Global Navigation Satellite System.
[3] Real-time kinematic.
[4] Visual-inertial odometry.
[5] Light detection and ranging.
[6] Automatic dependent surveillance-broadcast.

## 4 Operational requirements

### *4.1 Assumptions*

For this pilot project, it is assumed that the drone will operate point-to-point between post offices, carrying a mixed postal cargo, i.e. letters, documents, small parcels and packets. The drone will be based at the GPO and will fly to each local post office in the loop to load and deposit the payload, with battery changes or refuelling occurring at local post offices, where necessary.

All handling tasks (unloading, battery change or refuelling) will be performed by Post Fiji staff. The entire operation will be coordinated closely with Post Fiji, with designated landing and take-off zones cordoned off during the agreed launch and landing windows.

### *4.2 Flight schedule*

– Number of UAS: minimum one drone.

– Frequency: four flights per week, whereby one flight means a full loop.

– Estimated flights per month: minimum 16.

– While the operational loop could theoretically be completed three times per day, the actual flight frequency will be determined with Post Fiji and the CAAF during preparation of the pilot project. The determined frequency will be based on Post Fiji's operational needs, airspace availability, weather conditions and equipment capacity.

– Operating period: The Vendor must be prepared to execute the project from April to October (dry season). The detailed schedule will be contingent upon regulatory, operational and weather-related factors and must be adapted to Fiji's climatic conditions, in full consultation with and subject to the approval of the contracting authority, the UPU and Post Fiji.

### *4.3 Responsibilities*

– The Vendor shall operate the drone end-to-end throughout execution of the pilot project, performing all actions required for safe, efficient and successful operation.

– The Vendor is obliged to obtain the appropriate insurance to cover potential risks associated with the operation.

– Owing to challenging import and customs procedures, the Vendor should engage with Fiji's customs services early in order to confirm tariff classifications, duty rates, exemptions and required import documentation.

– The Vendor shall obtain a radio communication licence.

– Post Fiji staff will handle the loading and unloading of cargo at each post office and will provide necessary support in remote locations.

### *4.4 Ground infrastructure assessment*

The post offices are equipped with the ground infrastructure listed below. The Vendor shall be responsible for thoroughly evaluating these existing conditions and, where necessary or appropriate, implementing enhancements (e.g. landing pads, wind barriers) to ensure optimal operational performance.

Overview of currently available infrastructure:

| *Element* | *GPO* | *Post offices* |
|---|---|---|
| Landing zone area | 15 m × 15 m available | 15 m × 15 m available |
| Overhead obstructions | Sporadic cables | None |
| Surface | Concrete/asphalt | Mainly grass and nearby gravel road |
| Shared use | Shared with parking area/ loading dock | No |

| *Element* | *GPO* | *Post offices* |
|---|---|---|
| Wind exposure | Partially sheltered | Potentially unsheltered |
| Lighting | Available | Available |
| Cargo handling space | Available | Available |
| Staffing | Available (potentially partially) | Available (potentially partially) |
| Electrical supply | Available | Available |
| Backup generator | To be confirmed with Post Fiji | To be confirmed with Post Fiji |
| Indoor space for battery charging | Available | Potentially available (to be confirmed with Post Fiji) |
| Indoor workspace for drone maintenance | Available | Not available |
| Tools | To be confirmed with Post Fiji | Not available |
| Maintenance area access | To be confirmed with Post Fiji | Not available |
| Secure storage | To be confirmed with Post Fiji | To be confirmed with Post Fiji |
| Security measures | To be confirmed with Post Fiji | To be confirmed with Post Fiji |
| Connectivity | 4G/LTE/5G | Available + Starlink terminals |
| Internet/Wi-Fi | 4G/LTE/5G | Available + Starlink terminals |

The Vendor is expected to supply all necessary equipment to support the ground infrastructure essential for the successful operation of the drone delivery pilot project. This includes, but is not limited to, portable landing pads, portable wind barriers, backup generators, spare parts, toolkits for routine drone maintenance and repairs, and redundant communication architecture. This list is not exhaustive, and the Vendor should assess the availability of ground infrastructure based on the information from the table above. Furthermore, during phase 1 of the pilot project, the Vendor shall coordinate with Post Fiji to identify and confirm any upgrades – particularly with respect to security, electrical capacity and other relevant infrastructure – necessary to ensure the seamless implementation and execution of the pilot project.

## 5 Regulatory and legal requirements

The Vendor shall comply with all applicable regulations governing unmanned aircraft operations in Fiji:

– The drone must already be certified by an ICAO member state;

– The pilot/operator must be certified by an ICAO member state;

– During planning of the pilot project, the Vendor should reference New Zealand's regulatory framework for drone operations as a benchmark, given its expected adoption as the foundation for Fiji's regulatory standards.

Throughout the preparation and execution of the pilot project, the Vendor shall coordinate closely with the CAAF, other regulators, local bodies and relevant authorities.

Post Fiji and the UPU will lend their full support and cooperation to facilitate the timely acquisition of all necessary permits. Continuous engagement with regulators and proactive management of the permit process are mandatory to ensure uninterrupted and fully compliant operations.

## 6 Weather and environmental constraints

The Vendor shall take Fiji's weather constraints (cyclone season) fully into account in planning and executing the pilot project. All flight schedules, system specifications, maintenance routines and safety margins must be adapted to temperature extremes, high winds and seasonal precipitation patterns.

## 7 Training requirements

The Vendor must deliver training for the involved Post Fiji staff, to enable them to perform the necessary operations during the pilot project, including, but not limited to:

– drone technology and operational basics;

– safe loading and dispatch of the drone;

– battery upkeep, charging and change procedures (or potentially refuelling);

– safe drone storage procedures;

– ground handling and cargo handover protocols.

*Important: An initial training plan will be provided by the UPU; however, the final scope must be verified and, if necessary, adjusted by the Vendor.*

In addition, the Vendor will obtain training from Post Fiji to familiarize the drone operators with the necessary postal operations.

## 8 Timeline

The Vendor shall deliver the following during and after the pilot:

| # | *Milestones* | *Deliverable* | *Phase* | *Duration*[7] |
|---|---|---|---|---|
| 1 | Obtain customs permit from the CAAF | Customs permit to import drone to Fiji | Pre-pilot | 7 months |
| 2 | Submission of commercial authorization application and corridor designation request | Full package of documents required for flight permit and authorization submission | | |
| 3 | Preparation of specific operations risk assessment (or equivalent) | Operation risk assessment | | |
| 4 | Public consultations | Summary of public opinion and perspectives on pilot project | | |
| 5 | Set-up of ground infrastructure and tracking system | Ground infrastructure assessment report with potential purchase/installation plan | Pre-pilot | |
| 6 | Staff training | – Delivery of training curriculum and materials<br>– Attendance record and competency sign-off certificate | Pre-pilot | |
| 7 | One month for test flights, necessary updates/upgrades and one month for scheduled operating flights | – Weekly operational logs<br>– Monthly progress briefs | Pilot execution | 2 months |

[7] Given that the procedures for flight authorization and permit acquisition in Fiji lack formal structure, the duration may fluctuate. This estimate is based on research and discussions with the CAAF.

| # | *Milestones* | *Deliverable* | *Phase* | *Duration*[8] |
|---|---|---|---|---|
| 8 | Draft of summary of operations[9] | – Performance report<br>– Viability, practicality and business case scenario report | Post-pilot | 2 months |
| 9 | Draft of recommendations for scale-up or route extension | Executive summary of scale-up options and implementation roadmap | | |
| 10 | Final reporting | – Summary of operations<br>– Recommendations for scale-up or route extension | | |

[8] Given that the procedures for flight authorization and permit acquisition in Fiji lack formal structure, the duration may fluctuate. This estimate is based on research and discussions with the CAAF.

[9] The Vendor shall continuously monitor pilot performance and deliver detailed analytical reports encompassing comprehensive operational logs – including cargo volumes, flight metrics and incident records – alongside key performance indicators. These reports will provide the data-driven insights required to inform decisions on scaling up the drone cargo programme in Fiji and assessing the cost-efficiency of operations.