Request for Proposals:

Long-Range Unmanned Aerial Vehicle / Drone Demonstration Flights for Polio and COVID-19 Lab Sample and Vaccine Transport in Central African Republic

Point of contact: procurement@villagereach.org

Question submission deadline: 23 July 2021

Final submission deadline: 30 July 2021

1.   Organization Overview

VillageReach is an international non-profit organization that transforms health care delivery to reach everyone, so that each person has the health care needed to thrive. We develop solutions that improve equity and access to primary health care. This includes making sure products are available when and where they are needed and primary health care services are delivered to the most under-reached. Radical collaboration with governments, the private sector and other partners strengthen our ability to scale and sustain these solutions. VillageReach works to increase access to quality health care for 43 million people in sub-Saharan Africa.

The **World Health Organization** (WHO) is the specialized agency of the United Nations responsible for health, established in 1948. It is an intergovernmental organization with currently 194 Member States and 151 country offices. WHO's broad mandate includes advocating for universal healthcare, monitoring public health risks, coordinating responses to health emergencies, and promoting human health and wellbeing. It provides technical assistance to countries, sets international health standards and guidelines, and collects data on global health issues. WHO cooperates with governmental entities, particularly ministries of health and non-state actors such as non-governmental organizations (NGOs). The WHO Country Office in the Central African Republic was established in 1961.

2.   Project Overview

In sub-Saharan Africa, some governments have begun to use drones or unmanned aerial vehicles (UAVs) as a potential part of a responsive and resilient transport network for medical products which better addresses longstanding in-country transportation challenges. It is believed that UAVs can increase access to quality health products especially in rural or hard-to-reach areas where the unit cost of delivering health products and developing infrastructure is high. Over the last several years, significant progress has been made in demonstrating the technological feasibility of using <150 km range UAVs to transport small, critical payloads to and from hard-to-reach areas across the African continent. On the contrary, the technological feasibility of operating longer-range cargo UAVs within the African continent has yet to be determined.

The World Health Organization's (WHO) country office in the Central African Republic (CAR), has identified a potential opportunity to improve the speed and reliability of polio and COVID-19 laboratory sample transportation by integrating UAV transportation into the public health supply chain, which may also serve for the delivery of small quantities of medical supplies (e.g. vaccines, blood products, medicines). VillageReach is supporting the WHO to assess the feasibility of longer-range UAV transportation (more than 300 km each way) in CAR. The project aims to conduct UAV demonstration flights in CAR to demonstrate the capability of long-range UAVs to safely and reliably transport health products and to generate basic evidence on the associated costs, potential benefits and operational feasibility of long-range UAV transportation.

The Central African Republic is a landlocked country, of over 620,000 km^2, located in the center of the African continent. The country has faced a humanitarian crisis since 2012, although there has been relative improvement following a peace agreement between the Government of CAR and

fourteen armed groups signed in early 2019[1] - until recent instability and violence resurfaced in December 2020, prior to the presidential and parliament elections. Access to health services faces a number of challenges including inconsistent access to medical care and frequent stock outs of health commodities[2]. In May of 2019, the CAR Ministry of Health declared an epidemic of vaccine derived poliovirus as a public health emergency of national concern, which is considered a regional threat by WHO[3]. Consistent access to vaccination services as well as timely identification of new cases is critical to controlling the epidemic. Now, the MoH is battling dual public health emergencies with the COVID-19 pandemic. As of February 2021, CAR has approximately 5,000[4] confirmed cases of COVID-19.

The current laboratory sample transportation network in CAR, particularly in remote areas of the country, often requires a combination of transportation through motorcycle taxis, district vehicles, transport companies, air transportation by the United National Humanitarian Air Services (UNHAS), and sometimes by river. This process requires several days once the samples have been collected and dispatched from the health center to two central laboratories in the Capital of Bangui, one operated by the Institut de Pasteur, and one by the Ministry of Health. In 2019, only 67% of polio samples arrived at the laboratory within the recommended 7 day timeframe and many (59%) in inadequate conditions because of high temperature[5]. The introduction of UAVs as one component of a responsive and resilient transportation network has the potential to overcome these difficulties, enabling communities living across CAR to access life-saving services and prevent the further spread of polio, COVID-19 and other diseases.

This project represents an opportunity to identify how long-range UAVs can strengthen an existing transportation network – not just for lab samples but also for vaccines, medicines and supplies – to improve the availability, accessibility, and responsiveness of health services in the Central African Republic. In CAR, this will be the first time that medical products are flown by drone. The data generated from these initial demonstration flights will inform recommendations to the WHO and CAR government around the use of UAVs for an optimized health supply chain, and add to the growing body of literature on drones globally.

3.   Scope of Work

The vendor's primary role is to work with WHO and VillageReach to obtain approvals from the CAR Civil Aviation Authority (ANAC), Customs Authorities, of and all other government authorities and conduct demonstration flights carrying laboratory samples, vaccines and potentially other health products, over a two week period. Thus, vendors should be prepared to be in to CAR for approximately 21 days in November or December of 2021 (detailed scope of work is described below). CAR has not developed regulations for drone operations but approvals or waivers will be sought for beyond visual line of site (BVLOS) flights; this will likely require the submission of a safety case to ANAC. The vendor will work closely with VillageReach and WHO's CAR office and all relevant

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[1] Central African Republic: UN chief hails signing of new peace agreement
[2] Bulletin de Cluster Santé, Central African Republic Health Cluster
[3] Circulating vaccine-derived poliovirus type 2 – African Region
[4] COVID-19 Dashboard by the Center for Systems Science and Engineering at Johns Hopkins University
[5] Documentation Nationale Complete Pour La Certification De L'éradication De La Poliomyélite Dans La Région Africaine, Republic Centrafricaine Ministere De La Sante Et De La Population.

authorities to obtain the necessary approvals prior to flying and to ensure that aircraft safety regulations and requirements are met or exceeded at all times.

Demonstration flights will be conducted between Bangui and a secure landing location, approximately300 km (one way geodesic distance) from Bangui. The tentative flight path is over terrain with average elevations between 1200 ft and 2600 ft above mean sea level. The cargo will be a minimum of 5 kg, and will need to be maintained at a controlled temperature between 2-8 degrees Celsius. The flights are planned to occur in November or December 2021, in reasonable weather conditions (not during periods of heavy rain or winds exceeding 10 metres per second). .In November-December, you can expect temperatures ranging between 21.5-32.5 degrees Celsius, high humidity, and an average of 26mm of monthly rainfall.. Maps are viewable here, however due to their age, they are only valid for terrain features.

The vendor will track and record a series of metrics, including payload weight, payload temperature range, speed of the aircraft, the duration of the flights, distance covered, and any problems encountered and resolutions due to weather, mechanical, software or human error, etc. At the conclusion of this project, the vendor will provide all flight data requested including detailed reports of any adverse events (i.e. accidents or incidents).

Particularly given the complex nature of the humanitarian crisis in CAR and the military context associated with unmanned aviation operations, VillageReach will engage a local partner to conduct community sensitization before the UAV flights take place around the drone take-off and landing locations, to ensure that the population at large is aware of the demonstration flights, their purpose, and what to do to stay safe when the UAV takes off and lands. Vendors will be required to provide photographs or other collateral materials for use in community sensitizations.

Due to ongoing high-level government position changes, there is a chance these demonstration flights may need to be conducted in a nearby country instead. If this is the case, assume in your response that the flight conditions are similar to what would have been found in CAR.

Detailed Scope of Work
Before the trip:

a. Participate in answering any remaining questions from the WHO and VillageReach in calls/meetings as needed in the planning phases for demonstration flights.
b. Submit documentation for flight permissions and a safety case to ANAC in CAR, as requested.
c. Acquire the necessary insurance, for both the aircraft and for personal liability, to fly in CAR as per ANAC and/or VillageReach requirements or guidelines.
d. Submit all customs requirements documentation to the relevant exporting country for timely arrival in CAR.
e. Submit all customs requirement documentation needed to WHO and VillageReach for timely submission to the CAR Revenue Authority.
f. Coordinate transportation of a minimum of two UAVs of the latest cargo aircraft model, batteries, chargers, GPS trackers, temperature data loggers, satellite phones and any other equipment required to fly the UAVs, and to communicate, and conduct basic maintenance and repairs on site, in Bangui.

g. Exchange with VillageReach and WHO on payload compartment requirements and make adjustments as needed to ensure the safe transport of potentially infectious lab samples and vaccines in cold chain conditions.

h. Help develop an emergency protocol for flights in collaboration with VillageReach, WHO and appropriate aviation and security authorities in CAR.

i. As requested, provide photographs or other collateral materials for use in educational materials about the UAV for community sensitization.

j. Plan all logistics and travel to CAR including safety and security mitigation plans.

In CAR –November-December 2021

k. Travel to CAR with between 2-4 team members and any equipment not previously shipped, planning to be in CAR for approximately 21 days (not including international travel days).

l. Meet with all relevant authorities (Ministry of Health, ANAC, etc.), health facility and lab staff, WHO and VillageReach to ensure proper introductions and planning.

m. Prepare the UAV for health product package transport, which must be maintained at 2-8 degrees Celsius.

n. Ensure adequate testing is done and safety features are intact. Work closely with ANAC to ensure that aircraft safety regulations and requirements are met or exceeded at all times.

o. Have discussions with ANAC and other authorities prior to flights to validate exact route and flight schedule for the dates of the flights.

p. Travel to and set up flight operations stations at designated take-off and landing sites.

q. Conduct daily debriefs with authorities before and/or after flights, as needed.

r. Conduct round trip flights carrying health products between designated locations– for a maximum of 2 weeks during daylight and potentially at night, weather permitting. Number of daily flights will vary by vendor but at least one round-trip, per day, per aircraft, is expected. Track the UAV and share information about the aircraft and its whereabouts throughout the flights with authorities.

s. Ensure adherence to emergency protocol should any adverse event occur during the flights.

t. Conduct maintenance and repairs as needed during flight period.

u. Participate in press opportunities and debrief meetings with authorities.

v. Provide all agreed-upon data and metrics, including: payload temperature before and after the flights, number of units in the payload, payload weight, time to destination, distance travelled, weather and wind variables, problems encountered, problem resolution and detailed reports in case of any adverse events.

w. Propose solutions for any technological or operational constraints identified during demonstration flights, in order to provide recommendations for potential routine operations.

x. With logistical support from WHO, export drones and related equipment from CAR.

After the trip:

y. Provide basic cost information that will be requested by VillageReach for a basic, preliminary cost and benefit analysis, including aircraft leasing costs, operational costs, and estimated cost per delivery. The requested information may include variables such as numbers of staff required, aircrafts, maintenance costs, depreciation, etc.

z. Draft or review a final report and presentation, including lessons learned.

aa. Participate in calls/meetings as needed during the follow-up phases of the project, through February 2022. This is expected to require minimal staff time.

4. Payment linked Deliverables

a. Secure the necessary permissions to export UAVs from home country, import UAVs into CAR and conduct UAV flights in CAR, with support from VillageReach and WHO.

b. Travel to CAR, and conduct demonstration flights, carrying cargo, as described.

c. Provide a report within 3 weeks of flight conclusion to include data on UAV performance and safety, including any accident/incident reports.

d. Provide non-binding quotations for costs of routine operations in CAR for governmental planning and budgeting purposes, prior to or no later than 3 weeks after the flights. Quotations should include the cost of each aircraft, batteries and other components, insurance, maintenance, other operating costs or UAV logistics service costs, amongst others.

5. Schedule of Events

VillageReach will evaluate all responses to this Request for Proposal (RFP) in collaboration with independent UAV experts and an evaluation committee in CAR. The current estimated timetable for the selection process and activities is summarized below.

Milestone	Completion Date
Release RFP via email	16 July, 2021
Interested vendors have the option to submit questions of clarification by emailing procurement@villagereach.org	23 July, 2021
Vendors submit proposals to VillageReach via email: procurement@villagereach.org, with subject: "CAR RFP – Name of lead company applying"	30 July, 2021
Interviews, in-person or virtual assessment by technical expert and reference check, followed by vendor selection	August, 2021 (estimated)
Contract signature between VillageReach and drone service provider, joint application for flights, security and customs approvals and sharing of basic performance and cost data	September 2021 (estimated)
Demonstration flights in CAR	November/December 2021 (estimated)

VillageReach may reach out with clarifying questions regarding application materials or proposed technology. There will also be an in-person or virtual evaluation of technology capabilities and flights by VillageReach, through an independent technical expert, at which time the pre-selected vendor(s) will be expected to demonstrate aircraft specifications as described in this RFP.

6.   RFP Questions and Due Date

Questions regarding this RFP are encouraged and should be submitted by e-mail to the address listed below by 23 July, 2021. Should a prospective Vendor perceive any material ambiguity, conflict, discrepancy, omission, or other error in this RFP, the vendor should send a question to confirm or clarify the information in question.

Note: Applications will be submitted any time after the release of the RFP and no later than 30 July, 2021, by emailing:

Email: procurement@villagereach.org

7.   Evaluation Criteria

All proposals will be evaluated based on standardized criteria, summarized as follows[6] and described in further detail below:

- Technical capability of the drone platform: Capabilities and design of the UAV, and required infrastructure, as it pertains to this project (see Technical Specifications section below)
- Operational plan and feasibility of conducting health product deliveries in the given setting
    - o In the case of CAR, there are additional safety and security considerations and requirements
- Organizational capability, staff experience, business model, sustainability, and shared values
    - o Flexibility: Vendor's willingness and ability to meet project needs
    - o Staff availability: Vendor's availability to participate in the various phases of the project (regulatory approvals, export/import, set up, training, flight operations, etc.) within the required timeframe
    - o Level of service offered: Ability of Vendor's business model to assure long-term sustainability in future phases of implementation
    - o Shared values/social mission: Alignment of vendor's organizational missions, and values, and commitment with VillageReach's values.
    - o References: Positive assessment of previous work performance in a similar environment, backed by data and direct observation
- Budget to complete deliverables: Cost-effectiveness of proposed budget for services to complete RFP deliverables
- Future cost of services: Cost-effectiveness of proposed non-binding budget for a sample scenario for 12 months of future operations in CAR

8.   Shared Value Requirements

Due to the complex nature of the humanitarian crisis in CAR and the military context associated with unmanned aviation operations, VillageReach is taking particular precautions to ensure that the introductions of drones for medical product transport abide by VillageReach's organizational values

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[6] Evaluation criteria are primarily drawn from "How to select a drone service provider for transport of health products – lessons learned" a document published in 2020 by VillageReach in collaboration with Cyclops Air, WeRobotics and Swoop Aero.

and the Humanitarian UAV Code of Conduct[7]. Community trust is critical for the success of this project and the future use of drones for medical product transport. Drone operations in conflict zones, that intentionally or unintentionally, become part of or associated with ongoing conflict dynamics can result in serious unintended consequences including loss of community trust in services, human rights violations or loss of life. To that end, bidders/potential vendors must agree:

a. To be sensitive to the complex nature of working in CAR and the effects of conflict on local communities, including their prior history with or perceptions of UAVs;

b. To (1) establish protocols for adverse events in which a UAV is irretrievable or captured by armed actors, and for data breaches and other threats to data security that may endanger populations in conflict situations, and (2) record and report such incidents so they may be used as learning opportunities;

c. Remove or disable any on-board position logging equipment, in order to prevent route identification by unauthorized persons in the event of an unscheduled landing;

d. If the UAV is fitted with a camera system, any on-board recording capability is to be removed or disabled, in order to prevent route identification by unauthorised persons in the event of an unscheduled landing;

e. To follow VillageReach's external communication guidelines[8] for any and all publicity and media associated with this project, including avoiding use of military or intelligence community terminology in internal and external communications;

f. Comply with zero tolerance policy on the prevention of sexual abuse and exploitation as established by the humanitarian community in CAR

g. Not to share project data with any governmental entity, organization, or person that partakes in military, surveillance or peacekeeping activities; and

h. During the term of the project, not to work with or seek work from such entities, organizations, or persons.

9.   Security Requirements

Safety and security mitigation and planning are a top priority for this project. The security context in the CAR is highly complex. The U.S. State Department ranks travel to CAR as Level 4: DO NOT TRAVEL due to violent crime, civil unrest, kidnapping, limited foreign embassies who can assist travellers and COVID-19. All areas of CAR are considered high risk, including the capital city of Bangui. Over 60% of the territory is controlled by rebel groups. VillageReach is working directly with the government of CAR, WHO and various international and local security agencies to monitor the security situation and propose operations that limit, to the best of our ability, potential safety and security incidence; however, **vendors are responsible for their own safety and that of their equipment. It is essential for potential vendors to research the security situation and determine their own risk when considering bidding for this project. Vendors will be required to comply with all VillageReach and WHO security requirements and recommendations when preparing for and during travel in CAR.**

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[7] Humanitarian UAV Code of Conduct: Fully Revised for 2020-2021
[8] VillageReach Communications Guidance and Preferences

10.   Proposal Submission Instructions

A prospective vendor should prepare any offer simply and economically, giving a straightforward, concise picture of that vendor's ability to satisfy the requirements of the RFP.

Interested vendors are required to submit the following:

a.   A completed **Vendor Response Template (Annex A),** which contains the technical requirements, with concrete descriptions of how the applicant will meet or exceed technical requirements and detailed responses for all other essential technical information.

b.   A narrative application, approximately five pages, which includes a concrete description of how the applicant will adhere to the **Scope of Work (Section 3), Shared Value Requirements (Section 8), Security Requirements (Section 9), Routine Operations Sample Scenario (Annex C)** and any other information that responds to the requirements outlined in this RFP.

c.   A completed **Vendor Budget Template (Annex B),** which includes an itemized budget to meet RFP deliverables, as described in the **Payment Linked Deliverables (Section 4)** and a **non-binding** itemized budget for future routine operations in CAR, as described in the **Routine Operations Sample Scenario (Annex C)**. No budget ceiling or range will be provided, in an effort to quantify the actual costs of implementing these flights in CAR, and to account for variations in the type of technology and the location of the vendor. Vendors **do not** need to budget for import and export fees into/out of CAR, inter-CAR travel and transport, or local security for the aircraft or personnel.

Each prospective vendor shall include a statement in its RFP submission that the entire document (including scope and prices set forth in the binding budget for Payment Linked Deliverables contained in Annex B) are firm for not less than three months from the date of the quotation.

11.   General Conditions

This RFP is not an offer to contract. The issuing of this RFP does not commit VillageReach to award a contract to any vendor, even if all requirements stated in this RFP are met, and will not limit our right to negotiate in our best interest.

VillageReach shall not be responsible or liable in any manner for any risks, costs, or expenses incurred by any prospective vendor in responding to this RFP, including but not limited to the selected vendor(s).

12.   Reservation of Rights

a. VillageReach reserves the right to reject any and all offers for any reason or for no reason whatsoever, in whole or in part. Without limiting the generality of the foregoing, VillageReach may reject any offer that fails to follow the RFP Information outline; is submitted on forms that contain printed terms or stipulations; is conditional, qualified or incomplete in any manner; or contains any irregularities of any kind.

b. VillageReach reserves the right to withdraw this RFP at any time or to modify this RFP by one or more addenda issued through the same methods as the original RFP release to whom VillageReach issued this RFP. VillageReach shall incur no liability whatsoever to prospective vendors by reason of such withdrawal or modifications.

c. VillageReach reserves the right at any time to discontinue the RFP process, and enter into discussions and/or negotiations with any one vendor if such action is in our best interest.

d. VillageReach reserves the right to modify any estimated requirements prior to signing a contract with the selected vendor(s). No prospective vendor shall have a claim on VillageReach in the event any estimated requirements are modified for whatever reason.

e. This RFP will be sent to multiple vendors. VillageReach reserves the right to enter into separate contracts with multiple vendors if it desires to do so.

f. Vendors may apply as a consortium; however, VillageReach reserves the right to select any, all or none of the members of the consortium to provide services.

g. *Given the evolving political and security situation in CAR, VillageReach reserves the right to withdraw, change the scope of work or schedule of events, or cancel the project at any time.*

13. Confidentiality of Proposals

VillageReach routinely handles all information submitted in response to an RFP with care, uses it only for evaluation purposes, and restricts access to a minimum number of persons. VillageReach assumes no obligation and shall incur no liability regarding confidentiality of all or any portion of a quotation or any other material submitted in response to this RFP unless VillageReach has expressly agreed in writing to protect specifically identified information.

14. Prerequisites for Doing Business

Any vendor entering into a business partnership with VillageReach must:

a. Be stable and financially healthy.

b. Have adequate and qualified personnel to provide responsive service and quality maintenance and support.

c. Provide adequate warranties or other legal recourse upon product or service failure.

d. Agree that payment will be linked to performance according to achievement of project deliverables.

Annex A. Vendor Response Template

CAR RFP Vendor
Response Template -

Annex B. Vendor Budget Template

CAR RFP Vendor
Budget Template - Fin

If you are unable to access the Annex A and B linked files, please email procurement@villagereach.org for assistance.

Annex C. Routine Operations Sample Scenario

As this is a demonstration project to determine if, in the future, routine use of UAVs for health commodity transportation is feasible in CAR, VillageReach will consider financial feasibility as well as technical feasibility. To do so, in addition to the budget for the demonstration flights planned in November-December 2021, vendors will be required to submit a *non-binding* budget outlining the cost required to meet a sample scenario, outlined in Table 1, for 14 months of routine operations in CAR. As the scope of potential future routine operations in CAR is highly dependent on the outcomes of the demonstration flights, at this stage, we can only offer a sample scenario for potential routine operations.

We understand that some costs may be unknown or highly variable, and as such, vendors will not be bound to the rates provided in this budget. Vendors should provide costs to the best of their ability and are encouraged to provide detailed explanations for assumptions made, particularly for items in which the local CAR costs are unknown or highly variable (such as fuel prices, etc.). Vendors will not be penalized for listing a cost item with a $0 rate, provided an explanation is listed, if the cost of an item is unobtainable at this time. VillageReach has provided some standard rates for vendors to use in the **Vendor Budget Template (Annex B.)**. Vendors **do not** need to budget for import and export fees into/out of CAR, inter-CAR travel and transport, or local security for the aircraft or personnel.

If a vendor is solely a UAV manufacturer and would not provide on ground flight services in CAR for future routine operations, please provide the costs to purchase or lease the aircraft, required equipment, auxiliary costs necessary for the aircraft to operate (fuel, consumables, satellite data, etc.) and number of staff required to operate it.

If a consortium of operators and manufacturers or UAV service providers are applying, please submit a combined budget with all costs required to procure and maintain equipment and running costs (staff, fuel, consumables, satellite data, accommodation, etc.) for the UAV network should be listed.

*Table 1: Sample scenario for future routine drone services*

| Operating locations | Operation will take place out of a central hub, delivering to and collecting products from 8 locations along 6 different routes, see Figure 1 below. Where longer distances are involved, intermediate refuelling points may be available, as indicated in Figure 1. If your aircraft is not capable of reaching a delivery point, please indicate which routes you will be able to service.

 We welcome innovative solutions to the routing which demonstrate cost efficiencies in your submissions.

 Note: The UAV to be used will require equal or better performance than that used for the demonstration flights. You |

	need to assume operation with the same weather/wind /alternate landing site requirements as for the demonstration flights (see technical requirements in Vendor Response Template).
The payload delivery task	Operators will be required to collect 141.3 g of laboratory samples, with a total volume of 144 cm^3, from each delivery location **every weekday (5 days per week).** Samples need to be brought back to the central hub, from each delivery location.
	Operators will be required to deliver 42.05 kg of immunization products, with a total volume of 3.96 m^3, to each delivery location, **each month.** Immunization products can be split up and sent to the delivery locations on the daily flights.
	Note: If your solution relies on parachute delivery, what is the furthest distance your drone can fly (headwind 10 km/hr) from overhead the delivery sites to a landing site?
Length of operations	Expected contract duration 14 months. 2 months start up, 12 months of flight operations.
Operating schedule	Weekdays - 5 days per week. Flights in daylight or night-time hours, subject to a maximum of 9 hour working day.
Aircraft numbers	Calculate and list the number of UAVs you would need in CAR at any one time to support this operation of 6 simultaneous routes (including sufficient spare aircrafts and support equipment to avoid flight delays or cancellations).
	Assume 1 spare aircraft at each distant location plus a suitable number of spare aircraft at Hub location.
Fuel	How many litres of fuel will you require per month to achieve the product deliveries (show your calculations) at: a. The primary operations hub in Bangui. b. Each of the landing/stop over locations.
Staff	Calculate and list the number of staff that will be required to: a. Set up the operation (and for how long). b. Manage the operation for contract duration in CAR. c. For routine operation of UAVs at the central hub and at each of the other delivery locations. Specify local vs. international staff where possible, and part-time vs. full-time.
	At what intervals would you rotate international staff in and out of the deployed base? Provide costs associated with such travel.

	With access to skilled staff (local technical university graduate), how long would it take you train such an individual to operate the drone delivery network in CAR? Please include on-the-job training costs. Training will need to be conducted in French. Please indicate which positions could be transferred to local staff and how many months into operations would it take to fully transition operations to these staff, eliminating the need for international staff.

Sample scenario CAR UAV network configuration
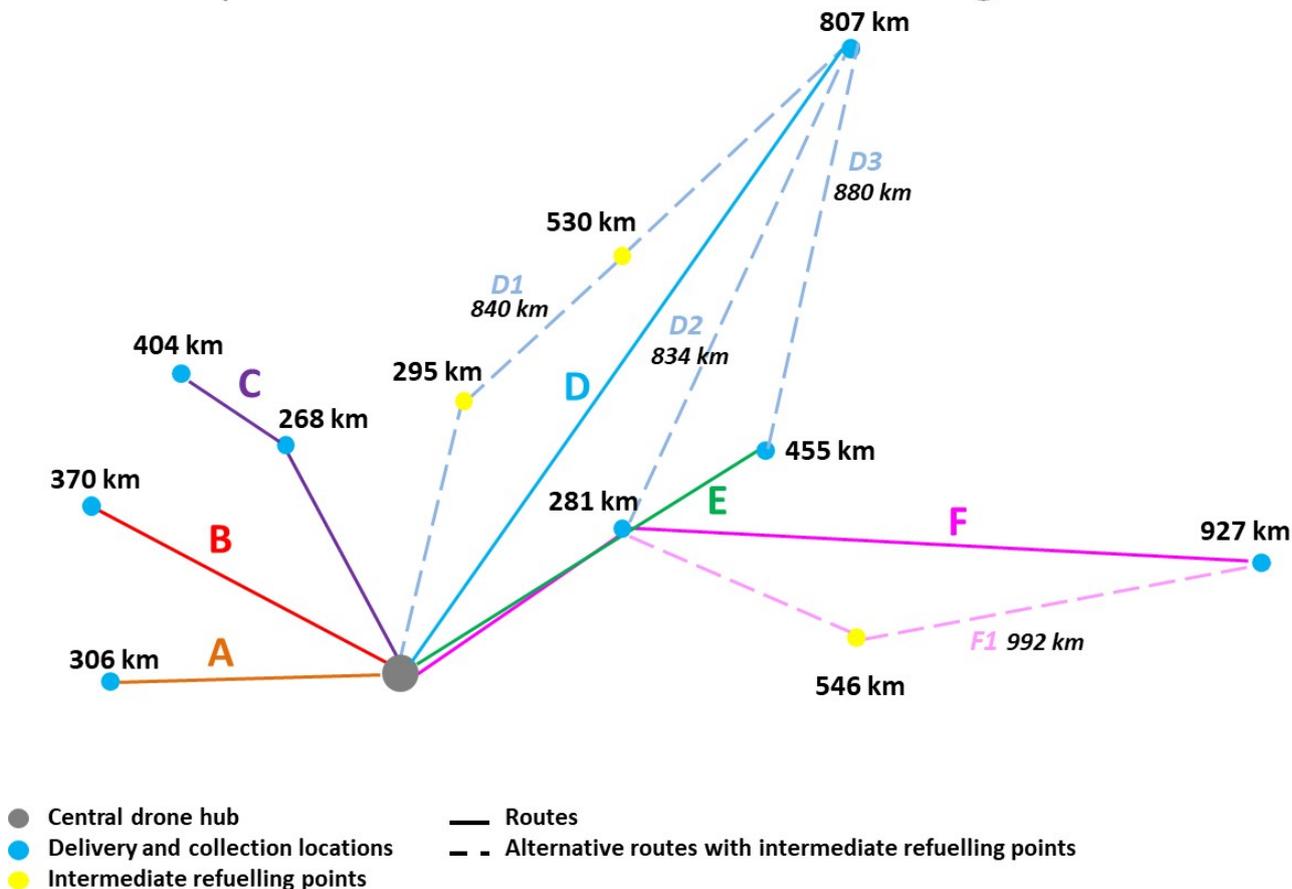
Total number of routes – 6
Total number of delivery locations – 8

Route A – delivery and collection at 306 km
Route B - delivery and collection at 370 km
Route C - deliveries and collections at 268 and 404 km
Route D - delivery and collection at 807 km
Alternative route D1 - alternative stops at 295 and 530 km for a total distance of 840 km
*Alternative route D2 - alternative stop at 281 km on **route E** for a total distance of 834 km*
*Alternative route D3 – alternative stop at 455 km on **route E** for a total distance of 880 km*
Route E - deliveries and collections at 281 and 455 km
Route F* - delivery and collection at 927 km
Alternative route F1– alternative stops at 281 km on **route E** and 546 km for a total distance of 992 km*

* Straight line routing from the central hub to the locations on routes F and F1 is not achievable due to international boundary constraints.