FLEXDRONE

DRONES SUPPORTING HEALTH OUTCOMES IN UGANDA

Who we are

- Flexdrone Ltd is a Ugandan drone services company, founded by a German and Ugandan team.
- Working with partners in Uganda and abroad like WeRobotics to pioneer innovative and appropriate uses of medical cargo drones in Uganda.
- Design and develop solutions in Uganda, build local capacity, intellectual property and create skilled jobs.

On demand logistics

Blood Delivery

- **Six (6) blood related deaths** in Uganda **every day**, many avoidable.
- Blood management is a problem, collection, stocking, expiry and provision.
- Fast response drone service enables efficacy.
- Smart integrated mobile application working with the drone.
- Driving whole-of-system improvement.
- Proof of Concept in traffic-congested Kampala.

Medical Cargo

- Medical **supply gaps, stock-outs**, stock losses and **hard to reach areas** in Uganda.
- Affects quality of service, turns people away, costs lives.
- On-demand prioritised collection and delivery by drone where and when needed
- Wide range of medical cargo and serving different stakeholders.
- End to end management, minimising risks.

Kampala blood delivery

- **“BloodConnect”**
  - Collaboration between Ministry of ICT&NG, and Ugandan companies Flexdrone Ltd and Sysimo Technologies.
  - Ministry of Health to authorize work.
  - Understanding current blood service processes and requirements at UBTS (Blood Bank) and public hospitals.
  - Engaging regulatory bodies eg CAA.
  - Development of a mobile order management application connected to drone logistics.
  - Use of What3Words addressing system.
  - Delivery start likely March 2020

Problems in healthcare

- Logistical challenges to reach people in many areas, not cost justifiable with traditional equipment, cars and boats.
- Supply and demand data gaps, also leading to stockouts, products not available when needed.
- Reliance on fixed standard delivery – meaning non-timely servicing of patients and sometimes loss of life.
- Costs of storage and disposal issues for expired drugs.
- Theft a major issue, and insider trading.
- Inefficiency in moving items between health centres.
- Transient communities, and VHTs/mobile health workers, limited ability to carry items.
- Cost to access health centres – not always needed.
- Samples collection, slow, delayed diagnosis.
- Inadequately funded health facilities, and NMS supply.

Our vision

To create a flexible low-cost customer-responsive and more-accountable medical logistics service using drones and enabling technologies to cover the last-mile and hard-to-reach communities and workers, supporting the drive to universal health coverage, and ‘leaving nobody behind’.

Our solution

- Two-way and maybe multi-way drone service carrying at least 6kg, safe carriage of sensitive and non-sensitive cargo including Ebola samples.
- Just-in-time delivery, to avoid stockouts.
- Delivering and collecting anywhere (mapped).
- All types of medical products, vaccines, blood, patient samples and consumables, including gloves.
- Order management and fulfillment software (mobile app) developed in Uganda for end to end accountability, recipient validation.
- Ability to manage multiple missions and different (and proven) drones from the same system.

Our solution

- Open-user model, public, donor and private sector, with in-built payment mechanisms. Multi-use case.
- Community governance system - key stakeholders.
- Full training and support of health workers including mobile staff.
- Sharing of performance and issues data to a web dashboard for easy reference and actioning, also to inform regulators.
- Integration with existing health information and reporting systems including of stock data and treatment protocols.
- Local technical support and maintenance, creating skilled jobs.

Outcomes

- Improved quality of health services, saved lives and reduced risk.
- Support health campaign efficiency.
- Create new revenue and cost-saving opportunities.
- Optimise the health supply chain, including work of NMS and others.

Key success factors

- User capacities.
- Community acceptance.
- Sustainability. Financing.
- Cost vs benefit (inc. health impact).
- Integration with other systems and intra-health cooperation.
- Contextual appropriateness.
- Technical including loss.
- Regulatory approval.

Addressing the criteria

- Well known health service gap(s)?
- New? And designed in Uganda.
- Market-ready? A first phase (MVP) can be implemented speedily.
- Scalable? Based on low cost agile and technology-agnostic infrastructure.
- Compliant with health policy and regulatory framework? TBC.

Next steps – Proof of Concept

- Apply the design, product, process and service models.
- Learn and re-design with stakeholders.
- Determine feasibility, need and fit, and what a commercial model would look like.
- Kalangala District and its 64 islands is a challenging and rewarding place to start.

Kalangala District

- **Use case – Family Planning Support**
  - Health Access Connect (HAC) needs to make deliveries of family planning methods and related commodities to prevent stockouts in 8-10 health facilities in the districts of Masaka and Kalangala

  - HAC will be tracking the levels of stocks at these facilities, and then sending supplies from our "buffer stock" to make sure that health facilities do not run out of them. The drones can help HAC to deliver these supplies to remote health facilities in a timely and low-cost manner.

Thanks & Questions