



YO' CARE SOUTH SUDAN

SPECIFICATIONS FOR A VERSATILE MEDICAL DRONE FOR USE IN SOUTH SUDAN.

Yo' Care South Sudan, Inc., a registered healthcare organization, is seeking a medical drone specifically designed to address the unique challenges of South Sudan. These challenges include limited infrastructure, diverse terrains, and the need for reliable performance in remote areas. Below is a detailed list of specifications:

1. General Features:

- **Primary Purpose:** Transportation of medical supplies (e.g., vaccines, blood samples, medications, diagnostic kits) and emergency delivery of life-saving equipment (e.g., defibrillators, EpiPens).

2. Technical Specifications:

Flight Capabilities

- **Range:** Minimum 100 km (round trip) to accommodate remote regions.
- **Payload Capacity:** 5–10 kg to carry sufficient medical supplies.
- **Speed:** 80–120 km/h to ensure quick delivery in emergencies.
- **Flight Duration:** 2–3 hours per charge, extendable via hybrid power sources.

Navigation

- **GPS and GLONASS Support:** High-accuracy navigation even in remote areas.
- **Terrain Mapping:** LIDAR and optical sensors for obstacle avoidance.
- **Autonomous Flight:** Ability to operate on pre-programmed routes and adapt dynamically to changes.
- **Remote Control:** Manual override for safety and precision landing.

3. Power System

- **Primary Power Source:** High-capacity lithium-polymer battery or lithium-ion battery.
 - **Backup Power:** Solar-assisted charging for extended autonomy in sunny regions.
 - **Charging Time:** Quick-charge capability (within 1–2 hours).
 - **Swappable Batteries:** To minimize downtime between operations.
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4. Design and Durability

- **Weather Resistance:** IP65-rated or higher for operation in rain, dust, and wind.
- **Temperature Range:** -10°C to +50°C for diverse climatic conditions.
- **Lightweight Materials:** Carbon fiber or advanced composites for durability and efficiency.
- **Compact Size:** Easy storage and portability, with foldable arms for transport.

5. Medical Compatibility

- **Temperature-Controlled Compartments:** Insulated and equipped with active cooling for vaccines and temperature-sensitive supplies (2°C to 8°C).
- **Secure Containers:** Lockable and tamper-proof cargo bays.

6. Communication Systems

- **Real-Time Tracking:** Mobile app or web-based interface for monitoring location and status.
- **4G/5G and Satellite Connectivity:** Reliable communication in areas with limited cellular coverage.
- **Emergency Beacon:** Automatic alerts in case of a crash or deviation from the route.

7. Maintenance and Scalability

- **Easy Maintenance:** Modular design for quick repairs and part replacement.
- **Operational Lifespan:** 5 – 7 years with proper maintenance.
- **Software Upgradability:** Support for periodic firmware updates.
- **Training & Documentation:** Comprehensive guides for operators and technicians.

8. Cost and Affordability

- **Production Cost:** Target price below \$10,000 to ensure affordability for healthcare organizations.
- **Operational Cost:** Minimized through energy-efficient components and low-cost maintenance.

9. Ethical and Legal Compliance

- **Regulatory Compliance:** Meets aviation authority requirements (e.g., Civil Aviation Authority regulations in Africa and the Country of Manufacture).
- **Community Engagement:** Designed with input from local healthcare providers and governments to ensure acceptance.

Contacts:

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