
SkyCare

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Abstract

Remote and elderly populations often encounter challenges when accessing essential goods and services, often due to geographical remoteness and inadequate access to reliable transportation. SkyCare proposes a change driven by drones, increasing the accessibility of these communities to their essential goods and services, thus improving drastically their quality of life.

This proposal describes a multiphase approach, including:

- (1) Simulation and conceptualization of an autonomous drone delivery system for challenging terrain.
- (2) Testing for navigational algorithm and payload performance, defining a service parameter.
- (3) Tests comparing operational effectiveness and safety in prototype rural environments.
- (4) Contacting with crucial suppliers for elderly populations (such as pharmacies), to create optimal routes to deliver goods and services.

The drone is a multirotor (quadcopter or hexacopter) powered by a high-capacity LiPo battery (6S 22.2V, 15,000 mAh), and it connects to the SNS24 app via 5G for real-time data exchange. The payload compartment is refrigerated, and includes biometric authentication to make sure that only the destinitary can access the drone's contents. An app is also to be developed, which allows real-time drone tracking, order history access, and push notifications, ensuring secure and efficient medical deliveries.

SkyCare is ready to show that logistic services made by drones have the potential to deliver a sound and affordable means to enhance service levels to out-of-the-way populations of the older generation, not only in Portugal, but all around the globe.

Keywords: Drone, Delivery, RemoteHealthcareAccess, ElderlyPopulations, AutonomousNavigation, RefrigeratedPayload, SNS24Integration, RuralLogistics, MedicalDrone

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