Drone deployment system

MONITORING AND CREATING A DELIVERY SYSTEM THROUGH GLARUS

Drone deployment system

▶ The area here at GLARUS is densely populated by forests and various hiking regions (such as Klontal) and mountain biking.

Drone deployment system

Possible Uses

- In case of a medical emergency within the mountain, what would be the response time of personnel?

- If it is a minor accident and there is a minor need of medical equipment.

- A needed item was forgotten and in order to avoid cancelling the hiking trip, specific item could be delivered.

- Monitoring area of possible wildlife (Vision assistive system by Thanasis Mastrogeorgiou)

- A simple delivery. Human is hungry….. Human needs burger.

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Types

We have 2 specific tasks that need to be implemented.

1) Transfer items

2) Livestream a camera feed and all the data that we need (GPS coordinates, various calculations that are being created by V.A.S.

In order to accomplish those tasks we need Delivery Drones for transferring items and a custom drone based on a GPS drone with a 4G LTE modem the VAS system and a thermal camera.

Drone deployment system
General –Sociopolitical Difficulties

▶ **Law in Switzerland** is pretty simple concerning drones. If the drone is in direct eye contact there is no need for a permit or license. If the drone will travel at distances that are greater than human vision (binoculars or other aid), a license must be issued by FOCA (Federal Office of Civil Aviation). Also if the drone exceeds 500 grain weight again a license is required and a guarantee of at least 1 million Francs in damage

▶ How do your neighbors feel about drones flying over their heads in the area?

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Technical Difficulties

- **Range**. Need to know the type connectivity the drone uses with the pilot. If controls are transferred through a 4G network range would not be an issue (latency might be though…). If there is a private network between the pilot and the drone there will be a limit of range. The DJI Mavik 4 for example has a range of 7 km if no obstacles exist.Another option could be preloading the GPS coordinates

- **Battery lifetime.** If we take the previous drone it's battery life under perfect circumstances is 28 minutes. We need to make sure the battery will suffice for a round trip.