

Press release, 31 March 2017

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Logistics

Swiss Post drone to fly laboratory samples for Ticino hospitals

Since mid-March, Swiss Post, the Ticino EOC hospital group and drone manufacturer Matternet have been successfully conducting initial drone flights in Lugano. In the future, modern delivery drones will transport laboratory samples between two EOC hospitals. Now, the Federal Office for Civil Aviation (FOCA) has given the project the green light. The idea of a drone taking care of the exchange of laboratory samples in a city is a first in Switzerland – and also means that Swiss Post is playing a pioneering role in drone logistics worldwide.

In mid-March 2017, Swiss Post, the Ticino EOC hospital group and drone manufacturer Matternet launched a joint innovation project: they plan to use modern delivery drones to transport laboratory samples autonomously between two EOC hospitals in Lugano – the Ospedale Italiano and the Ospedale Civico (see [press release](#) dated 14 March). The samples are currently transported by road. The use of drones will make transport faster and more efficient in order to further enhance the provision of care to patients.

First test flights completed successfully

Since mid-March, there have been around 70 autonomous test flights between the two hospital locations. The Federal Office for Civil Aviation (FOCA) has been involved in the project from the outset: it has inspected the drone and its safety components, defined the legal conditions for flying it, and now granted Swiss Post and Matternet approval for the flights. The partners will carry out further test flights until 4 April, after which an initial evaluation will take place. Further testing with flights is planned over a one-month period in summer 2017.

Regular drone flights expected from 2018

As soon as the drone meets all of the strict requirements regarding safety, practicality and reliability, the regular use of drones between the two hospitals will become an everyday occurrence. This is expected to be achieved by 2018. From then on, trained hospital staff will be able to load the drone independently with a safety box (in which the lab samples are packaged) and launch the drone with a smartphone application. The drone will then fly autonomously along the predefined route to its destination, where the box will be received by another member of staff.

Swiss Post uses state-of-the-art delivery drones

The logistics drone in use in Lugano is equipped with the very latest technology. It is a quadcopter from the American manufacturer Matternet. The drone is compact at 80 cm in diameter (without rotor blades), specializes in the transport of light goods weighing up to two kilograms, has a maximum range of 20 kilometres and flies at an average speed of 10 metres per second (36 kilometres per hour). For safety reasons, duplicates of both the autopilot and other important sensors (e.g. altimeter, accelerometer, gyrometer) are always installed. In the

event of the failure of all electronics, a parachute would be released automatically. A landing pad that transmits an infrared signal is used at the take-off and landing points. During its approach, the drone can detect this signal to ensure a pinpoint landing.

Swiss Post plays pioneering role in drone logistics

Swiss Post is one of the first companies in the world to test autonomous drone logistics for a commercial application. With this step, Swiss Post is once again demonstrating its pioneering role in drone logistics and its innovative strength. For Swiss Post, the use of drones in logistics over the last mile is of particular interest. The focus is on the transport of special items or the delivery of supplies to places cut off from the outside world after a storm. In the future, drones will complement traditional parcel delivery sensibly, but they will not replace it. In addition to drones, Swiss Post is also testing other autonomous systems, such as delivery robots and intelligent shuttles.

You can find **photos and videos of the drones** in the online version of this press release at www.swisspost.ch/news. Additional **information on drone logistics** at Swiss Post can be found at www.swisspost.ch/drones.

About the EOC hospital group (www.eoc.ch/en/)

The EOC hospital group is the largest healthcare provider in the Canton of Ticino, with a market share of around 70 percent. EOC comprises the canton's public hospitals and operates in Lugano, Bellinzona, Locarno, Mendrisio, Novaggio, Acquarossa and Faido for acute and outpatient medical care as well as rehabilitation.

About Matternet (<https://mttr.net>)

Matternet is the leading developer of autonomous drone logistics systems. The company's complete solution for automated aerial logistics enables customers to implement and grow modular networks of any size at the scale of their needs. Matternet has partnerships with some of the world's most trusted organizations including Swiss Post, Mercedes-Benz Vans, Swiss WorldCargo, UNICEF, World Health Organization and Doctors Without Borders.

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Specifications (March 2017)

In action for public health: MATTERNET M2



General

- Make: Matternet
- Model: M2 V7
- Swiss FOCA Certified: March 2017
- Aircraft type: Quadcopter
- Propulsion: Electric motors
- Power: Lithium-ion battery
- Communications: GSM Cellular

Vehicle

- Dimensions (without propellers): 80 x 80 x 26 cm
- Dimensions (with propellers): 128 x 128 x 26 cm
- Empty weight (with battery): 9.5 kg
- Max gross takeoff weight: 11.5 kg
- Max range (no wind, at sea level): 20 km with 1 kg
- Cruise speed: 10 m/s
- Cruise altitude: 110 m AGL

Payload Capacity

- Weight: 2 kg
- Volume: 4 L
- Dimensions: 19 x 11 x 13 cm

Weather Performance

- Max demonstrated airspeed: 12 m/s
- Temperature: -10 to +40 °C
- Flight into rain* and known icing conditions prohibited

Command and Control

- GSM connectivity to Matternet Cloud for automated operations
- Commanded through Matternet iPhone app

Safety Features

- Automatically-deployed parachute
- Multi-factor 3D geofence

* Rain performance capability expected June 2017

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