

YOUR DRONE SMART SYSTEM: GROUND STATION FOR DELIVERIES AND PICK-UPS BY DRONE AND METHOD OF LOAD DELIVERY AND PICK-UP BY DRONE

Main Technological Area → Mechanics

Keywords → Drones | Delivery | Pickup | Networking | Antenna | Docking

The patent refers to a ground station for deliveries and pick-up by drone and a related method. Air delivery has always been a fascinating and difficult topic for retailers and companies dealing with logistics due to technological and regulatory limitations.

In recent years, however, following the improvement of drone performance in terms of controllability and precision, some large companies have started pilot projects for the delivery of goods.

The invention aims to create a ground station that can be easily installed on any fixed or mobile structure (such as a building or a means of transport) and allows an easy procedure for approaching the drone to the structure and releasing (as well as picking up) of a load carried by the drone itself (i.e. load contained in a carrier module delivered and picked up by the drone).

TECHNICAL SPECIFICATIONS

The system for delivering and/or picking up objects by drone includes a ground station and a plurality of drones configured to transport a load and equipped with a kit of sensors and communication systems to interface with the ground station.

The ground station can be made available on any fixed structure such as a building (for example it can be installed on a balcony, on a window, on a roof etc.) or on a mobile structure such as a ship, but also a van or in any case a generic vehicle.

Generally speaking, the ground station includes a vertical structure fixable to the ground to a fixed structure or to a vehicle and provided with a movable arm between a rest position and an extended "activation" position in which the arm extends and emerges from its protective housing.

The extendable arm is equipped with sensors designed to detect both when it is in the rest position and the achievement of the extended activation position. The arm is also equipped with a sensor that detects the force applied by a load hanging from one end of the arm and consequently the presence/absence of this load.

The ground station is also equipped with a short-range bidirectional communication system created with known technologies (for example Bluetooth™) and configured to communicate with the drone and manage the docking/undocking phase.

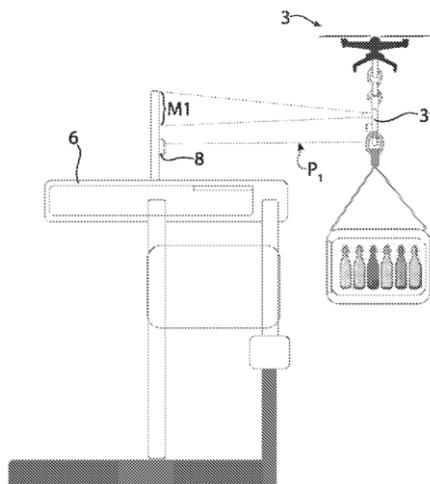


Figure 1 – Docking phase sample schematic

INNOVATION/ADVANTAGES

- Compact, multifunctional solution (delivery, kinematics, communication).
- Greater precision in the coupling phases
- Reduction and simplification of module installation, removal, replacement and maintenance activities

FIELDS OF APPLICATION

Nautical	Offshore platforms, boats, search and rescue operations
Logistics	Deliveries, waste disposal, medical assistance, integration with Traffic Management systems

PATENT INFORMATION

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