UAV BALCONY DELIVERIES TO MULTI-LEVEL BUILDINGS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is based on U.S. Application No. 16/703,170, filed December 4, 2019, the content of which is hereby incorporated by reference in its entirety.

TECHNICAL FIELD

[0002] This disclosure relates generally to unmanned aerial vehicles (UAVs), and in particular but not exclusively, relates to the use of UAVs for deliveries of packages.

BACKGROUND INFORMATION

[0003] Drone delivery is positioned to change the way lightweight goods are moved between locations (e.g. from retailer to consumer). However high-density urban spaces, particularly multi-level buildings, present a challenge to aircraft that are attempting to make a delivery. The most straightforward and desirable delivery approaches have an unobstructed path for the drone to follow during its route to drop off a package, which is challenging to identify and allocate in high-density urban spaces. The challenge of identifying the correct delivery destination is particularly acute for urban apartment residences that are tightly situated with low incidence of externally distinguishing features. Compounding the problem is the navigational challenge of maneuvering inside the "urban canyon" where traditional navigation methods (e.g. GPS) are unreliable.

SUMMARY OF INVENTION

[0003a] According to a first aspect of the present invention, there is provided a computer-implemented method for validating a balcony to receive aerial delivery of a parcel via an unmanned aerial vehicle (UAV), the method comprising:

obtaining, via a computing device, a first identification of a general location of the balcony;

generating, for display on the computing device, a first image representing a building, wherein the building includes the balcony and the first image is selected based upon the general location identified by the end-user;

obtaining, via the computing device, a second identification or a confirmation of a precise location of the balcony in the building, wherein the second identification or the confirmation are received in response to an end-user interaction with the first image;

determining a deliverability score based at least in part on the precise location of the balcony; and

indicating an enrollment status to the end-user, via the computing device, the enrollment status generated based upon the deliverability score.

[0003b] According to a first aspect of the present invention, there is provided at least one machine-accessible storage medium that provides instructions that, when executed by a machine, will cause the machine to perform operations comprising:

obtaining, via a computing device, a first identification of a general location of a balcony to receive delivery of a parcel via an unmanned aerial vehicle (UAV);

generating, for display on the computing device, a first image representing a building, wherein the building includes the balcony and the first image is selected based upon the general location identified by the end-user;

obtaining, via the computing device, a second identification or a confirmation of a precise location of the balcony in the building, wherein the second identification or the confirmation are received in response to an end-user interaction with the first image;

determining a deliverability score based at least in part on the precise location of the balcony; and

indicating an enrollment status to the end-user, via the computing device, the enrollment status generated based upon the deliverability score.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] Non-limiting and non-exhaustive embodiments of the invention are described with reference to the following figures, wherein like reference numerals refer to like parts throughout the various views unless otherwise specified. Not all instances of an element are necessarily labeled so as not to clutter the drawings where appropriate. The drawings are not necessarily to scale, emphasis instead being placed upon illustrating the principles being described.