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19/034,874	01/23/2025	Jeremy Frederick	1672-010888	9430

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Cognition IP, P.C.
50 California St, Suite 1500
San Francisco, CA 94111

EXAMINER	
POINT, RUFUS C	

ART UNIT	PAPER NUMBER
2689	

NOTIFICATION DATE	DELIVERY MODE
04/14/2026	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 19/034,874	Applicant(s) Frederick et al.	
	Examiner RUFUS C POINT	Art Unit 2689	AIA (First Inventor to File) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☑ Responsive to communication(s) filed on 23 January 2025.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-6,10-11 and 14-20 is/are rejected.

8) ☑ Claim(s) 7-9 and 12-13 is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☑ The drawing(s) filed on 23 January 2025 is/are: a)☑ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date _____.

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 102

2. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis (i.e., changing from AIA to pre-AIA) for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.
>
> (a)(2) the claimed invention was described in a patent issued under section 151, or in an application for patent published or deemed published under section 122(b), in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention.

3. Claim(s) 1,2,4, 14 and 18 are rejected under 35 U.S.C. 102(a)(1) and (a)(2) as being anticipated by Zafar (US 20190265082 A1).

Claim 1. Zafar teaches a mesh sensor deployment system for real-time environmental data gathering

(Fig 6. [0016] [0018]a meshing wireless network

[0110] one embodiment of a meshing local sensor system 600 comprising gateway 102, three standalone sensor units 605A to 605C, repeater 608,

and local sensor 607, which has been enabled for wireless communication by WJB 606…

[0011][0012]The cloud computing system performs analysis on the environmental data collected by the sensors, thereby providing predictive analytics that can be used for responsive automation... a grain storage environment that detects an environmental variable from the grain storage environment, generates environmental data based on the environmental variable, and the sends environmental data.)

, the system comprising:

one or more drop pods

(Figs. 3, 4, 7a [0110] the sensor unit **105** in which a sensor pod **705** is enclosed in a ball-shaped three-dimensional round enclosure **701.**[0185] during deployment of the sensor pod, it might have to be dropped from significant heights...)

, wherein each of the one or more drop pods comprise:

a connection interface for an aircraft

([0190] In some embodiments, the delivery and/or retrieval of the enclosed sensor unit 700 is achieved using drones. In such embodiments, the three-dimensional round enclosure 701 may further comprise further modification (e.g., one or more handles, divots, openings, grooves, etc.) to facilitate the handling of the enclosed sensor unit 700 by the drone during delivery and/or retrieval...In yet other embodiments, delivery and/or retrieval of the enclosed sensor unit **700** is achieved through magnetism. For example, retrieval can be

achieved using electromagnets that are energized and de-energized in sequence such that the ball rolls itself along a metal surface.);

a pod mesh radio module

([0074] the sensor pod communicates using at least one of the following wireless protocols: ZigBee, Z-Wave, Thread, Bluetooth mesh, or Wi-Fi mesh.);

a pod battery module

([0106] Power is provided by power supply 301, which may get its power from, e.g., a battery, a DC power source or an AC power source such as an electrical outlet.);

and one or more pod sensor modules, wherein the one or more pod sensor modules comprise

one or more sensors consisting of cameras, microphones, gas sensors and temperature sensors

([0193] a camera may be included on an enclosed sensor unit 700.

[0156] a single sensor unit 105 comprises a temperature sensor, a humidity sensor, a carbon dioxide sensor, an oxygen sensor, a phosphine sensor, an ethylene sensor, a sound/acoustic sensor, a pressure sensor, and an accelerometer.);

wherein the one or more deployed drop pods are configured to be retrieved or repositioned by the aircraft

([0190] In some embodiments, the delivery and/or retrieval of the enclosed sensor unit 700 is achieved using drones. In such embodiments, the three-dimensional round enclosure 701 may further comprise further modification (e.g., one or more handles, divots, openings, grooves, etc.) to facilitate the handling of the enclosed

sensor unit 700 by the drone during delivery and/or retrieval...In yet other embodiments, delivery and/or retrieval of the enclosed sensor unit **700** is achieved through magnetism. For example, retrieval can be achieved using electromagnets that are energized and de-energized in sequence such that the ball rolls itself along a metal surface.).

Claim 2. Zafar teaches the system of claim 1, wherein the aircraft connection interface comprises an electromagnet

([0190] In yet other embodiments, delivery and/or retrieval of the enclosed sensor unit 700 is achieved through magnetism. For example, retrieval can be achieved using electromagnets that are energized and de-energized in sequence such that the ball rolls itself along a metal surface.).

Claim 4. Zafar teaches the system of claim 1, wherein each of the one or more drop pods comprise: a mesh radio module configured to create a mesh wireless network with other drop pods and/or to create a mesh wireless network with the aircraft

([0017] In another embodiment, the system comprises a plurality of sensors units, the first network is a meshing wireless network, and each sensor unit of the plurality of sensor units functions as a node for the meshing wireless network;).

Claim 14. Zafar teaches a method of deploying a system for real-time environmental data gathering

(Fig 6. [0110] one embodiment of a meshing local sensor system 600 comprising gateway 102, three standalone sensor units 605A to 605C, repeater 608, and local sensor 607, which has been enabled for wireless communication by WJB 606…

[0011][0012]The cloud computing system performs analysis on the environmental data collected by the sensors, thereby providing predictive analytics that can be used for responsive automation... a grain storage environment that detects an environmental variable from the grain storage environment, generates environmental data based on the environmental variable, and the sends environmental data.)

, the system comprising:

deploying, via an aircraft, one or more drop pods

(Figs. 3, 4, 7a [0110] the sensor unit **105** in which a sensor pod **705** is enclosed in a ball-shaped three-dimensional round enclosure **701.**[0185] during deployment of the sensor pod, it might have to be dropped from significant heights...)

, wherein each of the one or more drop pods comprise:

a connection interface for the aircraft, wherein the one or more deployed drop pods are configured to be retrieved or repositioned by the aircraft

([0190] In some embodiments, the delivery and/or retrieval of the enclosed sensor unit 700 is achieved using drones. In such embodiments, the three-dimensional round enclosure 701 may further

comprise further modification (e.g., one or more handles, divots, openings, grooves, etc.) to facilitate the handling of the enclosed sensor unit 700 by the drone during delivery and/or retrieval...In yet other embodiments, delivery and/or retrieval of the enclosed sensor unit **700** is achieved through magnetism. For example, retrieval can be achieved using electromagnets that are energized and de-energized in sequence such that the ball rolls itself along a metal surface.);

a pod mesh radio module

([0074] the sensor pod communicates using at least one of the following wireless protocols: ZigBee, Z-Wave, Thread, Bluetooth mesh, or Wi-Fi mesh.);

and a pod battery module

([0106] Power is provided by power supply 301, which may get its power from, e.g., a battery, a DC power source or an AC power source such as an electrical outlet.);

one or more pod sensor modules, wherein the one or more pod sensor modules comprise one or more sensors consisting of cameras, microphones, gas sensors and temperature sensors

([0193] a camera may be included on an enclosed sensor unit 700.
[0156] a single sensor unit 105 comprises a temperature sensor, a humidity sensor, a carbon dioxide sensor, an oxygen sensor, a phosphine sensor, an ethylene sensor, a sound/acoustic sensor, a pressure sensor, and an accelerometer.);

and receiving sensor data from the one or more sensors, the deployed one or more drop pods

([0213] c. Data from a first sensor pod is send through a network (e.g. a self-organizing mesh network) to a second sensor pod wherein the comparison is made.).

Claim 18. Zafar teaches the method of claim 14, wherein each of the one or more drop pods comprise: a mesh radio module configured to create a mesh wireless network with other drop pods and/or to create a mesh wireless network with the aircraft

([0017] In another embodiment, the system comprises a plurality of sensors units, the first network is a meshing wireless network, and each sensor unit of the plurality of sensor units functions as a node for the meshing wireless network;).

Claim Rejections - 35 USC § 103

4. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis (i.e., changing from AIA to pre-AIA) for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries for establishing a background for determining obviousness under 35 U.S.C. 103 are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claim(s) 3 and 17 are rejected under 35 U.S.C. 103 as being unpatentable over Zafar in view of Ko (US 20170237908 A1).

Claim 3. Zafar teaches the system of claim 1, and further discloses the use of one camera but does not specifically disclose wherein each of the one or more drop pods comprise: a first camera disposed on a first side of the drop pod; and a second camera disposed on a second opposite side of the drop pod.

However, Ko teaches wherein each of the one or more drop pods comprise: a first camera disposed on a first side of the drop pod; and a second camera disposed on a second opposite side of the drop pod (Fig. 3 [0024] On the other hand, in the preferred embodiment where the image capture apparatus 10 has exactly two cameras 20, each camera 20 has a fish-eye lens 22 with a field of view of 190 degree and points in directions opposite to each other and substantially horizontally with the flat bottom 12.).

Therefore, it would have been obvious to one ordinarily skilled in the art before the effective filing date of invention to use a first and second camera as taught by Ko within the system of Zafar for the purpose of enhancing the pod within an ability to gain a panoramic view of the surrounding area.

Claim 17. Zafar teaches the method of claim 14, d further discloses the use of one camera but does not specifically disclose wherein each of the one or more drop pods comprise: a first camera disposed on a first side of the drop pod; and a second camera disposed on a second opposite side of the drop pod.

However, Ko teaches wherein each of the one or more drop pods comprise: a first camera disposed on a first side of the drop pod; and a second camera disposed on a second opposite side of the drop pod (Fig. 3 [0024] On the other hand, in the preferred embodiment where the image capture apparatus 10 has exactly two cameras 20, each camera 20 has a fish-eye lens 22 with a field of view of 190 degree and points in directions opposite to each other and substantially horizontally with the flat bottom 12.).

Therefore, it would have been obvious to one ordinarily skilled in the art before the effective filing date of invention to use a first and second camera as taught by Ko within the system of Zafar for the purpose of enhancing the pod within an ability to gain a panoramic view of the surrounding area.

6. Claim(s) 5,6,10,11,15, 19 and 20 are rejected under 35 U.S.C. 103 as being unpatentable over Zafar in view of Woodworth (US 20230406499 A1).

Claim 5. Zafar teaches the system of claim 1, one or more aircrafts, wherein each of the one or more aircrafts carries a payload of one or more of the one or more drop pods ([0190] In some embodiments, the delivery and/or retrieval of the enclosed sensor unit 700 is achieved using drones. In such embodiments, the three-dimensional round enclosure 701 may further comprise further modification (e.g., one or more handles, divots, openings, grooves, etc.) to facilitate the handling of the enclosed sensor unit 700 by the drone during delivery and/or retrieval),

and further discloses the use of a drone to retrieve and deliver drop pods but does not specifically disclose and wherein each of the one or more aircrafts further comprises: one or more aircraft sensor modules; a drop pod connection interface; and an aircraft battery module.

However, Woodworth teaches one or more aircraft sensor modules

([0166] Within examples, the package identification device 230 can be a sensor or a scanner that employs various technologies to interact with the payload 228 in order to identify the payload 228.

[0302] In addition, payloads 510-1 through 510-3 may include fiducials 585 that may take the form of an RFID tag or bar code to identify the contents of the payload and delivery site information and/or delivery instructions.);

a drop pod connection interface

([0306] Thus, the interaction of magnets 1060 on the interior 1056 of channel 1050 with magnets 830 or simply a metal on the payload retriever 800" provides a desired orientation of the payload retriever 800" at the point that payload retriever 800" exits the channel 1050 and engages handle 511 of payload 510 to remove the payload 510 from the payload holder 570, 572.);

and an aircraft battery module

([0152] In a further aspect, the UAV 200 may include power system(s) 220. The power system 220 may include one or more batteries for providing power to the UAV 200.).

Therefore, it would have been obvious to one ordinarily skilled in the art before the effective filing date of invention to use one or more aircrafts as taught by Woodworth within the system of Zafar for the purpose of enhancing the aircraft which can have the autonomous ability to retrieve and detect a location for destination.

Claim 6. Zafar and Woodworth teach the system of claim 5, further comprising:

an aircraft mesh radio module in communication with a Ground Control Station

(GCS) and the one or more drop pods

(Woodworth [0189]As shown, an aerial transport service provider (ATSP) **402** may be communicatively coupled to UAV nests **354***a* to **354***d*, and communicatively coupled to item-provider computing systems **356***a* to **356***d*.)

, and wherein the aircraft mesh radio module is

configured to:

receive data and instructions from the GCS

(Woodworth [0293] At block 8306, the method includes determining, by the ATSP, an appropriate UAV to complete the delivery and assigning the delivery mission to the identified UAV.);

transmit instructions to the one or more drop pods

(Woodworth [0293] At block 8304, the method includes assigning, by the ATSP, an available autoloader for the delivery mission associated with the order. [0295] At block 8314, the ATSP receives confirmation that the payload has been placed at the assigned autoloader and deploys the assigned UAV for payload pickup.);

receive sensor data from the one or more drop pods

(Woodworth [0283] For example, the autoloader may include a computer system, a transmitter, and a label reader, such as a scanner, an RFID reader, or another reader, to identify the package label and the order associated with the label. With such a configuration, the autoloader may send, via the transmitter, information obtained by scanning the package label, such as an order identification, to the ATSP control system.);

send, to the GCS, aircraft sensor module data

(Woodworth [0300] At block **8420**, the method includes scanning the payload, by the UAV, to determine the corresponding delivery mission. For example, the UAV may scan the payload to determine an identification of the payload. In some embodiments, the UAV may then communicate with the ATSP to obtain the details of the delivery mission based on the payload ID.);

and relay the received sensor data to the GCS

(Woodworth [0300] At block **8420**, the method includes scanning the payload, by the UAV, to determine the corresponding delivery mission. For example, the UAV may scan the payload to determine an identification of the payload. In some embodiments, the UAV may then communicate with the ATSP to obtain the details of the delivery mission based on the payload ID.);

Claim 10. Zafar and Woodworth teach the system of claim 6, wherein the GCS is further configured to generate a mission plan for each of the one or more aircrafts based on the generated mission map

(Woodworth [0140] In order to navigate the UAV **200** to a target location (e.g., a delivery location), the navigation module **214** may implement various navigation techniques, such as map-based navigation and localization-based navigation, for instance. With map-based navigation, the UAV **200** may be provided with a map of its environment, which may then be used to navigate to a particular location on the map.).

Claim 11. Zafar and Woodworth teach the system of claim 6, wherein a mesh network is maintained between each of the deployed drop pods and the GCS

(Zafar [0105][0150] the gateway 102 uses, for example, the ZigBee protocol and similar protocols to communicate with all sensor nodes as a mesh network.).

Claim 15. Zafar teaches the method of claim 14, and further discloses the process of delivering retrieving the pod ([0190]) but does not specifically disclose relocating, via the aircraft, the deployed one or more drop pods from a first location to a second location.

However, Woodworth teaches relocating, via the aircraft, the deployed one or more drop pods from a first location to a second location

([0300] At block 8414, the method 8400 includes causing the UAV to fly to the pickup location, such as the premises of the item provider, or a specific pickup station on the premises. At block 8416, the method includes causing the UAV to identify an autoloader with an available

payload for pickup. For example, the UAV may detect the presence of the payload on the autoloader, or identify a signal from the autoloader indicating that the autoloader contains a payload for pickup. At block 8418, the method 8400 includes engaging the autoloader to receive the package. At block 8420, the method includes scanning the payload, by the UAV, to determine the corresponding delivery mission.).

Therefore, it would have been obvious to one ordinarily skilled in the art before the effective filing date of invention to use relocation as taught by Woodworth within the system of Zafar for the purpose of enhancing the aircraft with an ability to re-deploy the pod to specified locations.

Claim 19. Zafar teaches the method of claim 14, and further discloses the use of a drone to retrieve and deliver drop pods but does not specifically disclose automatically determining a location to release a carried drop pod from the aircraft; and automatically releasing the carried drop pod from the aircraft.

However, Woodworth teaches automatically determining a location to release a carried drop pod from the aircraft

([0300] At block 8414, the method 8400 includes causing the UAV to fly to the pickup location, such as the premises of the item provider, or a specific pickup station on the premises. At block 8416, the method includes causing the UAV to identify an autoloader with an available payload for pickup. For example, the UAV may detect the presence of the payload on the autoloader, or identify a signal from the autoloader indicating that the autoloader contains a payload for pickup. At block 8418, the method 8400 includes engaging the

autoloader to receive the package. At block 8420, the method includes scanning the payload, by the UAV, to determine the corresponding delivery mission.);

and automatically releasing the carried drop pod from the aircraft

([0196] The payload latch 406 can function to alternately secure payload 408 and release the payload 408 upon delivery.).

Therefore, it would have been obvious to one ordinarily skilled in the art before the effective filing date of invention to use determining a location and automatically releasing the carried drop pod from the aircraft as taught by Woodworth within the system of Zafar for the purpose of enhancing the aircraft with an ability to re-deploy the pod to specified locations without additional human intervention.

Claim 20. Zafar teaches the method of claim 14, further comprising: establishing a mesh network between the aircraft and the one or more drop pods

([0105] d the gateway 102 uses, for example, the ZigBee protocol and similar protocols to communicate with all sensor nodes as a mesh network.);

But does not specifically disclose determining a drop point for the one or more drop pods; and instructing the aircraft to drop the one or more drop pods at the drop point.

However, Woodworth teaches determining a drop point for the one or more drop pods

([0293] At block 8306, the method includes determining, by the ATSP, an appropriate UAV to complete the delivery and assigning the delivery mission to the identified UAV.);

and instructing the aircraft to drop the one or more drop pods at the drop point

([0300] At block **8420**, the method includes scanning the payload, by the UAV, to determine the corresponding delivery mission. For example, the UAV may scan the payload to determine an identification of the payload. In some embodiments, the UAV may then communicate with the ATSP to obtain the details of the delivery mission based on the payload ID.).

Therefore, it would have been obvious to one ordinarily skilled in the art before the effective filing date of invention to use relocation as taught by Woodworth within the system of Zafar for the purpose of enhancing the system with an ability to automate deployment of aircraft to specified locations.

7. Claim(s) 16 is rejected under 35 U.S.C. 103 as being unpatentable over Zafar in view of Zafar in view of Bolden (WO 2016069168 A1).

Claim 16. Zafar teaches the method of claim 14, and further discloses the pod possessing a camera and an aircraft deploying the pod but does not specifically disclose receiving, data feeds from the aircraft, wherein the data feeds comprise captured image frames received by the aircraft from the one or more drop pods.

However, Bolden teaches receiving, data feeds from the aircraft, wherein the data feeds comprise captured image frames received by the aircraft from the one or more drop pods

([0222] FIG. 54 shows a flow diagram of a process 5400 for operating the unmanned aerial vehicle 100 to drop-off the payload object 5000 according to some embodiments.

[0218] As another example, if the payload object 5000 is a an imaging sensor, the processor 802 of the unmanned aerial vehicle 100 may send control signals to the payload object 5000 in order to

control an image sensing function of the payload object 5000. In addition, imaging data generated by the payload object 5000 may be transmitted to the processor 802 for storage in the memory 804 of the unmanned aerial vehicle 100.).

Therefore, it would have been obvious to one ordinarily skilled in the art before the effective filing date of invention to use captured image frames received by the aircraft from the one or more drop pods as taught by Bolden within the system of Zafar for the purpose of ensuring the camera is operational for communication after deployment of the pod.

Allowable Subject Matter

8. Claims 7-9 and 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

For Claim 7, the prior art of record fails to teach the system of claim 6, further comprising wherein the ground control station comprises: a GCS mesh radio module, a GCS controller module; and a user interface module wherein, for each aircraft, the GCS is configured to: determine a drop location to drop each of the one or more drop pods carried by the aircraft, wherein the determining comprises: receiving, over the GCS mesh radio module, data feeds from the aircraft, wherein the data feeds comprise captured image frames and a radio signal strength indicator (RSSI); identifying, based on analysis of the captured image frames and a type associated with the one or more drop pods carried by the aircraft, one or more points of interest (POIs) for each of the one or more drop pods; and determining, based on a selection of a deploying drop pod, a drop point from the one or more POIs associated with the deploying drop pod when the RSSI drops below a predetermined threshold; and

instruct the aircraft to drop the deploying drop pod at the determined drop point; and wherein the GCS is further configured to: generate, by the user interface module, a graphical representation of the received data feeds from each aircraft and each drop pod; and display, to an operator, the generated graphical representation.

Claims 8 and 9 are dependents of claim 7, and are objected on the basis of claim 7.

The prior art of Zafar was the closest prior art to teach a GCS with a radio mesh module but lacks the teachings for the entirety of claim 7 as a whole.

The prior art of Woodworth was the closest prior art to teach a drone deployment system to pickup and deliver payloads but lacks the teachings for the entirety of claim 7 as a whole

For claim 12, the prior art fails to specifically teach Applicant's system of wherein the mission plan further comprises one or more projected drop locations, wherein the projected drop locations are based on a current state of the mission map, wherein the state of the mission map includes sensor data, the RSSI and locations of each of the deployed drop pods, and wherein the one or more projected drop locations are determined based on a distribution of the deployed drop pods and an estimated signal strength map of the mesh network.

Claim 13 is a dependents of claim 12, and is objected on the basis of claim 12.

The prior art of Woodworth was the closest prior art to teach a drone deployment system using localization to update map of the environment of multiple destinations but lacks teachings for claim 12 as a whole.

The prior art of Gupte (US 20180130017 A1) was the closest prior art of detecting signal strength and recording the coordinates based on the signal strength. However, the prior art lacks teaching of wherein the state of the mission map includes sensor data, the RSSI and locations of each of the deployed drop

pods, and wherein the one or more projected drop locations are determined based on a distribution of the deployed drop pods and an estimated signal strength map of the mesh network.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RUFUS C POINT whose telephone number is (571)270-7510. The examiner can normally be reached 9am-5pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Davetta Goins can be reached at 571-272-2957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: https://patentcenter.uspto.gov. Visit https://www.uspto.gov/patents/apply/patent-center for more information about Patent Center and https://www.uspto.gov/patents/docx for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RUFUS C POINT/
Primary Examiner, Art Unit 2689