

1) Family number: 71452153 (US2018292826A)

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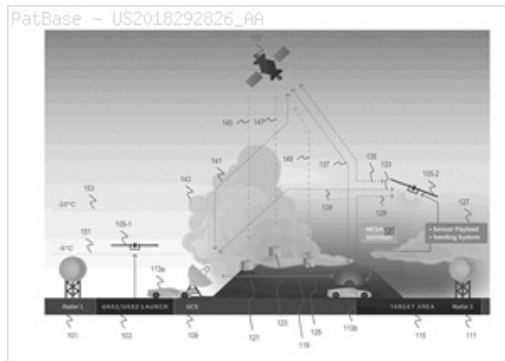
Title: INTELLIGENT SYSTEMS FOR WEATHER MODIFICATION PROGRAMS
Priority: US20170484043P 20170411 US20180944437 20180403
Family:

Publication number	Publication date	Application number	Application date
US2018292826 AA	20181011	US20180944437	20180403
WO18191134 A1	20181018	WO2018US26649	20180409

Probable Assignee: AXISA DUNCAN
Assignee(s):(std): AXISA DUNCAN ; DEFELICE THOMAS PETER
Inventor(s):(std): DEFELICE THOMAS PETER ; AXISA DUNCAN ; DEFELICE THOMAS
Agent(s): OTTERSTEDT PAUL J ET AL
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
International class (IPC 8-9): A01G15/00 G01W1/08 G05D1/00 G06F17/30 G08G5/00 (Advanced/Invention)
CPC: G05D1/0088 G08G5/0091 A01G15/00 G05D1/0094
US class: 239/2.1
[Classification Explorer](#)
Cited documents: WO10071305 A2, US2016299254 AA, US2015359184 AA, US2010001089 AA, CA2962076 AA,

Abstract:

Data including current locations of candidate clouds to be seeded is obtained; based on same, a vehicle is caused to move proximate at least one of the candidate clouds to be seeded. Weather and cloud system data are obtained from a sensor suite associated with the vehicle, while the vehicle and sensor suite are proximate the at least one of the candidate clouds to be seeded. Vehicle position parameters are obtained from the sensor suite associated with the vehicle. Based on the weather and cloud system data and the vehicle position parameters, it is determined, via a machine learning process, which of the candidate clouds should be seeded, and, within those of the candidate clouds which should be seeded, where to disperse an appropriate seeding material. The vehicle is controlled to carry out the seeding on the candidate clouds to be seeded, in accordance with the determining step.



2) Family number: 68640246 (WO18033812A1)

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Title: ADMINISTRATION OF SUBSTANCES TO ANIMALS
Priority: ZA20160005617 20160815
Family:

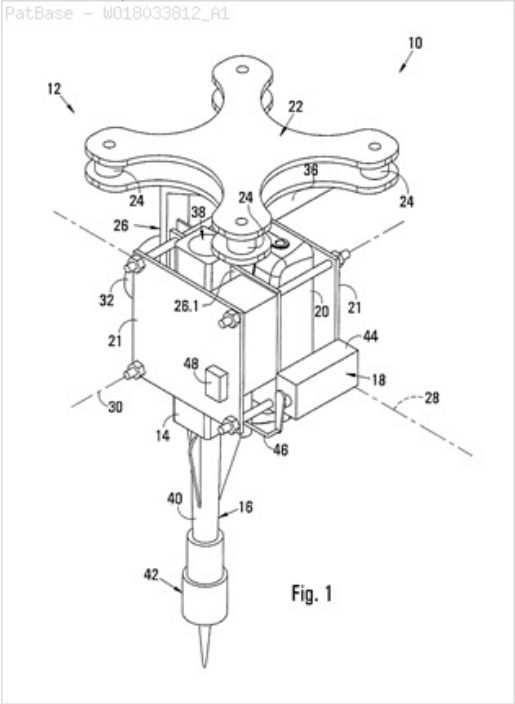
Publication number	Publication date	Application number	Application date
WO18033812 A1	20180222	WO2017IB54434	20170721

Probable Assignee: VISAGIE PIETER JOHAN
Assignee(s):(std): UAS FLIGHTEC SYSTEMS PTY LTD ; VISAGIE PIETER JOHAN
Assignee(s): UAS FLIGHTEC SYSTEMS PROPRIETARY LTD
Inventor(s):(std): SMIT JACOBUS PETRUS ; SMIT TIMO
Agent(s): WALT LOUIS STEPHANUS VAN D
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
International class (IPC 8-9): B64C39/02 B64C99/00 (Advanced/Invention)
CPC: B64C2201/121 B64C2201/127 B64C2201/128 B64C2201/146 B64C39/024 A61D7/00
[Classification Explorer](#)

Cited documents: WO16049217 A1, WO15154148 A1, US2015041593 AA, KR101535401 B1, JP2014167413 A2,

Abstract:

An unmanned aerial vehicle substance administration payload (10) includes a mounting (12) configured to mount to an unmanned aerial vehicle capable of hovering (a UAV). A magazine (14) is configured to hold at least one unguided free-fall projectile (16) configured to administer a substance to an animal upon impact with the animal. The magazine (14) is carried by the mounting (12). A release mechanism (18) is provided to release the unguided free-fall projectile (16) from the magazine (14) so that the projectile (16) can drop under the force of gravity from the magazine (14) to a target animal directly below the magazine (14). Aiming means (20) is associated with the magazine (14) to determine whether the magazine (14) is vertically directly above the target animal. A method of administering a substance to an animal using a UAV is also provided.



3) Family number: 73427311 (US2019071177A)

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Title: DISTRIBUTION ASSEMBLY FOR AN AERIAL VEHICLE
Priority: US20170553839P 20170902 US20180120500 20180904
Family:

Publication number	Publication date	Application number	Application date
US2019071177 AA	20190307	US20180120500	20180904
WO19046837 A1	20190307	WO2018US49290	20180902

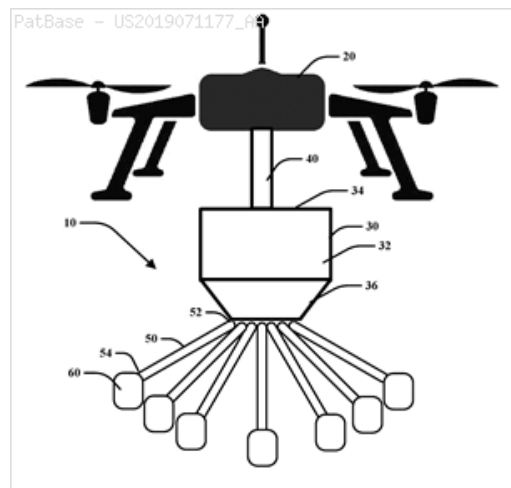
Probable Assignee: PREC DRONE SERVICES INTELLECTUAL PROPERTY LLC
Assignee(s):(std): PREC DRONE SERVICES INTELLECTUAL PROPERTY LLC
Assignee(s): PRECISION DRONE SERVICES INTELLECTUAL PROPERTY LLC
Inventor(s):(std): ZVARA STEPHEN
Agent(s): MASTERSON MARK J
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW
International class (IPC 8-9): A01C14/00 A01C21/00 A01C7/04 A01C7/20 B64C39/02 B64D1/08 B64D1/16 (Advanced/Invention); A01C1/06 A01C7/04 (Advanced/Non-invention)
CPC: B64C39/024 A01C7/042 A01C7/205 B64C2201/128 A01C14/00 A01C21/005 A01C7/206 A01C1/06 A01C7/04 B64D1/08 B64D1/16 A01G9/006 A01G9/0291 A01G9/0293

[Classification Explorer](#)

Cited documents: WO16209217 A1, WO16049217 A1, WO14088429 A1, US9382003 BB, US201762552564 P, DE102014007995 A1

Abstract:

Provided is a seeder assembly for an aerial vehicle as shown and described. The distribution assembly includes a frame selectively attachable to an aerial vehicle and at least one distribution device attached to the frame. The distribution device having a body defining a cavity to receive a plurality of products and a barrel to discharge the plurality of products. A control device configured to communicate with the aerial vehicle and the distribution device to coordinate the timing that products are discharged and a spacing of a subsequent discharged product relative to the speed of the aerial vehicle. A system, method, and cartridge device associated with the distribution assembly are also contemplated by this disclosure.



4) Family number: 15523321 (JP2001120151A)

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Title: AUTOMATIC AGROCHEMICAL SPRAYING DEVICE WITH RADIO CONTROLLED HELICOPTER USING GPS

Priority: JP19990306067 19991027

Family:

Publication number	Publication date	Application number	Application date
JP2001120151 A2	20010508	JP19990306067	19991027

Probable Assignee: NEC CORP

Assignee(s):(std): NEC CORP

Inventor(s):(std): KONDOU TENPEI

International class (IPC 8-9): A01M7/00 G01C21/00 G01S19/14 G01S19/41 (Advanced/Invention); G01C21/00 (Advanced/Non-invention);

A01M7/00 G01C21/00 G01S19/00 (Core/Invention);

G01C21/00 (Core/Non-invention)

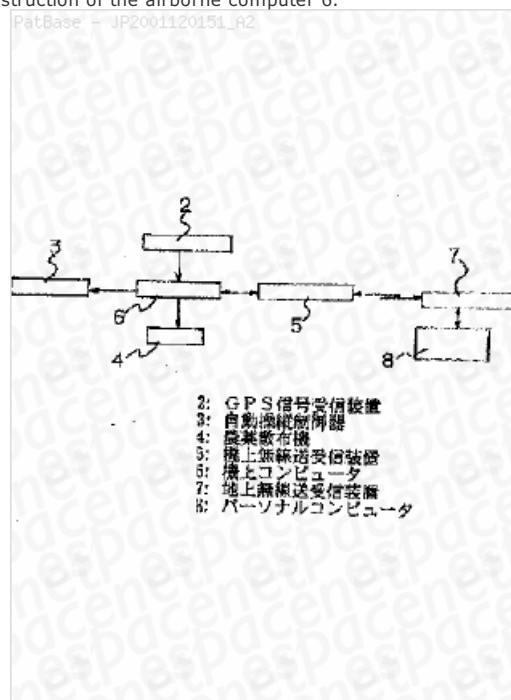
International class (IPC 1-7): A01M7/00 G01C21/00 G01S5/14

[Classification Explorer](#)

Forward Citations: WO18008675, KR101320111, KR101056377, KR100833721, JP6555781, JP4474275, JP4342355, JP4294994, JP4222510, JP4020293, JP2018531585, JP2018512583, JP2017530706, JP2016220681, JP2006176073, JP2005263112, JP2005263105, JP2004305805, JP2003154999, JP2002365358, CN106292698, CN103412574, CN101963806,

Abstract:

PROBLEM TO BE SOLVED: To automatically control a radio controlled helicopter and an agrochemical sprayer attached thereto by automatically grasping the position of the radio controlled helicopter utilizing a global position system(GPS). SOLUTION: A signal from a GPS satellite is received with a GPS receiver 2 and the GPS received data is transmitted to a personal computer 8 located on the ground. The flight route of automatic control and the agrochemical spraying time are computed with the personal computer 8 based on the information. The resultant information is then transmitted to an airborne computer 6 to carry out the control over an automatic control controller 3 and the agrochemical sprayer 4. A driving part of the radio controlled helicopter 1 is controlled under an instruction of the air borne computer 6 by the automatic control controller 3 to perform the automatic control. The agrochemical sprayer 4 performs the agrochemical spraying under the instruction of the airborne computer 6.



5) Family number: 50078341 (US2013068892A)

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Title: FLYING APPARATUS FOR AERIAL AGRICULTURAL APPLICATION

Priority: MY20100002587 20100604 WO2011MY00067 20110603

Family:

	Publication number	Publication date	Application number	Application date
	US2013068892 AA	20130321	US20110701503	20110603
	WO11152702 A1	20111208	WO2011MY00067	20110603

Probable Assignee: UNIVERSITI MALAYSIA PERLIS

Assignee(s):(std): AZLAN BIN ABDUL GHANI ; BIN AHMAM ZUL AZFAR ; BIN DESA HAZRY ; BIN DZULKIFLI MOHD ZAHIRUDDIN ; BIN MUHAMAD DALI MUHAMAD FIRDAUS ; MOHD ZAHIRUDDIN BIN DZULKIFLI ; ZUL AZFAR BIN AHMAM ; MUHAMAD FIRDAUS BIN MUHAMAD DALI ; UNIVERSITI MALAYSIA PERLIS ; HAZRI BIN DESA ; SHAFUL ZAIRI BIN AHMAD SUBHI

Inventor(s):(std): BIN AHMAM ZUL AZFAR ; BIN DESA HAZRY ; BIN DZULKIFLI MOHD ZAHIRUDDIN ; BIN MUHAMAD DALI MUHAMAD FIRDAUS ; ZUL AZFAR BIN AHMAM ; MOHD ZAHIRUDDIN BIN DZULKIFLI ; AZLAN BIN ABDUL GHANI ; SHAFUL ZAIRI BIN AHMAD SUBHI ; MUHAMAD FIRDAUS BIN MUHAMAD DALI ; HAZRI BIN DESA

Agent(s): LOK CHOON HONG

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8-9): B64C13/20 B64C19/00 B64C27/20 B64C29/00 B64C39/02 B64D1/18 B64D47/08 (Advanced/Invention)

CPC: B64C39/024 B64C2201/027 B64C2201/125 B64D1/18

European class: B64C39/02C B64D1/18

US class: 244/190 701/3 701/4

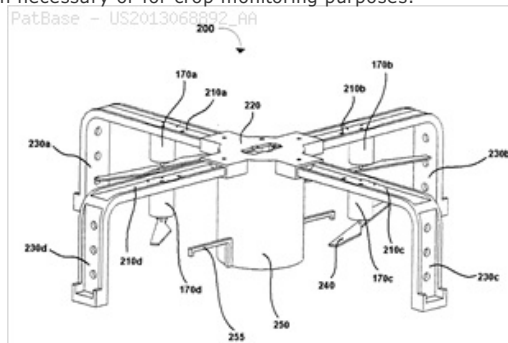
[Classification Explorer](#)

Cited documents: USD691514 S1, USD659771 S1, USD648809 S1, USD648808 S1, USD628658 S1, USD465196 S1, US8322648 BB, US8214088 BB, US6260796 BA, US6003782 A, US5823468 A, US5082079 A, US5025988 A, US4971082 A, US4799629 A, US4629148 A, US4591112 A, US4173321 A, US4171784 A, US3768757 A, US3428276 A, US3345016 A, US3211399 A, US3185410 A, US3053480 A, US2941753 A, US2014131510 AA, US2014061376 AA, US2013173088 AA, US2012241555 AA, US2012234969 AA, US2012091259 AA, US2011288696 AA, US2011139928 AA, US2011049290 AA, US2010243794 AA, US2009283630 AA, US2009283629 AA, US2008048065 AA, US2007105474 AA, US1749471 A, JP2003339297 A2,

Forward Citations: WO18139622, WO18123187, WO18123186, WO18048706, WO17185359, WO17133719, WO17079340, WO16081754, WO16049217, WO14160589, WO14055899, WO13117016, US9919797, US9902493, US9902491, US9878787, US9878786, US9852644, US9764829, US9756773, US9754496, US9650135, US9511859, US9394048, US9382003, US9321530, US9290267, US9284049, US9260184, US9233754, US9221537, US9221536, US9199733, US9162758, US9011250, US9004973, US2016307448, US2016272310, US2016176514, US2016159472, US2015290348, US2015266570, US2014339355, US2014303814, US2014263822, US2014138477, US10329025, US10307667, US10296005, US10272994, US10258888, US10196137, US10189562, US10155584, US10149916, US10134291, US10046854, KR20170013389, KR20150075587, KR101965539, KR101895736, KR101885851, KR101876847, KR101876846, KR101594313, JP6454318, JP6454317, JP6105181, JP2018108775, JP2018108774, JP2018083625, JP2018003080, GB2568007, ES2608903, ES2571005, EP3150492, EP3150492, EP2978665, EP2978665, EP2728308, EP2728308, DE102017010319, CN106564599, CN105292480, CN105292480, CN104568006, CN104568006,

Abstract:

A remotely controlled flying apparatus (200) utilized for crop-spraying and crop monitoring purposes is disclosed. The present indention comprises a microcontroller (110) electronically coupled to an inertia measuring means (120). A controller (140) is connected to a computer (130) to allow a user to control movements of the flying apparatus (200). The computer (130) interprets control motions of the controller (140) and translates the motions to control signals. Upon translation, control signals are sent to the microcontroller (110) wirelessly and the control signals are modulated by a pulse modulation generator (150) before they are sent to a plurality of speed controllers (160a-160d) which are coupled to a plurality of motors (170a-! 70d). The controller (140) allows the user to control the motions of the flying apparatus remote! }, by changing respective rotational speeds of the plurality of motors (170a-170d). The controller (140) also allows the user to wirelessly control a pump (180) or a camera (190) or both through the computer (130) for spraying a pesticide or fertilizer fluid-when necessary or for crop monitoring purposes.

**6) Family number: 55719476 (US2014035752A)**

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Title: METHODS, APPARATUS, AND SYSTEMS FOR DETERMINING IN-SEASON CROP STATUS IN AN AGRICULTURAL CROP AND ALERTING USERS

Priority: US20120568109 20120806 US20150794886 20150709

Family:

	Publication number	Publication date	Application number	Application date
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US2014035752 AA	20140206	US20120568109	20120806
US2015310721 AA	20151029	US20150794886	20150709
US9113590 BB	20150825	US20120568109	20120806

Probable Assignee: SUPERIOR EDGE INC
Assignee(s):(std): JOHNSON JEROME DALE ; SUPERIOR EDGE INC
Inventor(s):(std): JOHNSON JEROME DALE
Agent(s): KINNEY AND LANGE PA
International class A01B79/00 A01G1/00 G01W1/00 G06F17/30 G06F3/0484 G08B21/18 H04L29/06 (Advanced/Invention)
(IPC 8-9):
CPC: G08B21/18 H04L65/403 G06F3/0484 A01B79/005 A01G22/00 G06F16/22 G06F16/24578 G06F16/248 G06F16/285
US class: 1/1 340/540 340/601

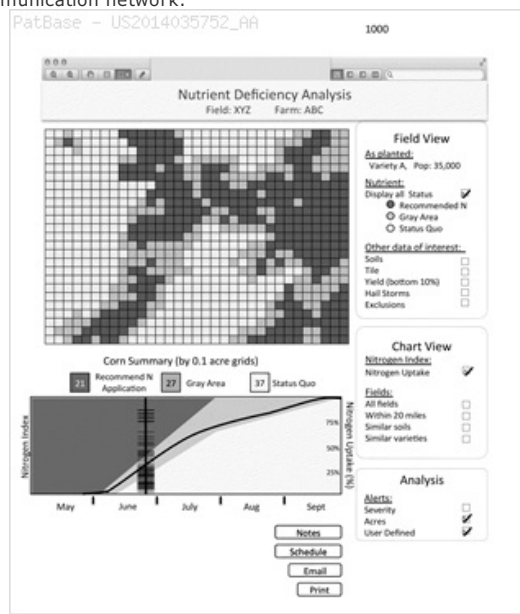
[Classification Explorer](#)

Cited documents: USRE37574 E, US9113590 BB, US8527301 BB, US8510195 BB, US8346578 BA, US8335747 BA, US8250481 BB, US8249926 BB, US8244563 BB, US8243997 BB, US8229769 BA, US8229768 BA, US8208680 BB, US8196030 BA, US8195473 BB, US8189877 BB, US8160944 BB, US8135178 BB, US8121345 BB, US8046306 BB, US8046280 BB, US7991754 BB, US7930085 BB, US7916898 BB, US7904332 BA, US7844475 BA, US7801759 BA, US7725233 BB, US7693765 BB, US7657469 BA, US7657124 BB, US7555472 BB, US7542960 BB, US7542958 BA, US7533069 BB, US7440901 BA, US7412330 BB, US7389181 BB, US7349888 BA, US7260561 BA, US7203667 BB, US7184892 BA, US7184859 BB, US7167800 BB, US7123750 BB, US7103451 BB, US7068816 BA, US7050910 BB, US7047133 BA, US7039592 BA, US6999877 BA, US6990459 BB, US6957202 BB, US6928434 BA, US6813544 BB, US6754184 BB, US6750898 BA, US6745184 BA, US6721543 BA, US6683970 BA, US6606542 BB, US6597991 BA, US6596996 BA, US6549851 BB, US6529615 BB, US6466321 BA, US6401070 BA, US6366681 BA, US6338040 BA, US6336066 BA, US6336051 BA, US6236907 BA, US6212824 BA, US6199000 BA, US6178406 BA, US6178406 B1, US6178253 BA, US6178253 B1, US6160902 A, US6141614 A, US6108590 A, US6078901 A, US6078892 A, US6014451 A, US5999650 A, US5938709 A, US5927603 A, US5919242 A, US5913915 A, US5878371 A, US5857174 A, US5845229 A, US5841883 A, US5764819 A, US5751576 A, US5689418 A, US5467271 A, US5412219 A, US5389781 A, US5361201 A, US5334987 A, US4371081 A, US2013168327 AA, US2013162390 AA, US2013093592 AA, US2013018586 AA, US2013013525 AA, US2012143633 AA, US2012123817 AA, US2012109387 AA, US2012101634 AA, US20111276336 AA, US2011196710 AA, US2011160994 AA, US2011137456 AA, US2011113030 AA, US2011066337 AA, US2011035059 AA, US2010306012 AA, US2010268390 AA, US2010042234 AA, US2009322357 AA, US2009240516 AA, US2009216594 AA, US2009192956 AA, US2009150323 AA, US2009043714 AA, US2009024555 AA, US2008291455 AA, US2008250330 AA, US2008215203 AA, US2008195270 AA, US2008162556 AA, US2008140431 AA, US2008022773 AA, US2007239337 AA, US2007208511 AA, US2007089390 AA, US2007050382 AA, US2006287896 AA, US2006282467 AA, US2006282295 AA, US2006025927 AA, US2006015374 AA, US2006015360 AA, US2005273253 AA, US2005149464 AA, US2005108343 AA, US2005075784 AA, US2005027572 AA, US2004167877 AA, US2004088330 AA, US2004087317 AA, US2004021862 AA, US2004006736 AA, US2003220805 AA, US2003139983 AA, US2003061075 AA, US2003018481 AA, US2002193928 AA, US2002178229 AA, US2002170229 AA, US2002138201 AA, US2001016053 AA, CN101398317 A,

Forward Citations: WO19055112, WO18048741, WO18009257, WO16183000, WO16049217, US9880559, US9880140, US9745060, US9740208, US9734400, US9719973, US9696162, US9652840, US9638678, US9563848, US9471064, US9439342, US9098553, US2018042174, US2017131254, US2017112057, US2017075354, US2017064507, US2016223506, US2016019560, US2015373902, US2015356482, US2015310721, US2015286929, US2014350980, US2014280208, US2014026474, US10390472, US10368481, US10346958, US10345826, US10321663, US10303677, US10295703, US10238028, US10231441, US10212876, US10192182, US10189568, US10188037, US10188036, US10143148, US10139279, US10095243, US10095235, US10078784, US10028451, US10028426, US10019018, NL2014166, JP2017530706, GB2568002, EP3494767, EP3295370, EP3197258, EP3183697, EP3000305, EP3000305, EP2980669, EP2980669, EP2980669, CN108182784, CN107711454, CN107249296, CN105823735, CN105823735, CN104597522, CN103885454, CN103885454, AU2015320681,

Abstract:

A crop's status may be determined from analysis of information regarding the crop received from, for example, a user, an in-season data gathering source, a database, a data feed, an aerial sensor, a UAV, and/or a remote sensor via a communication network. The received data may be compared to, for example, a benchmark, a parameter, a previously determined crop status, and/or a baseline associated with the crop and the comparison may be scored. When the score exceeds a predetermined threshold, an alert may be generated and provided to a user via the communication network.



Title: TECHNIQUES FOR AUTOMATED PLANTING

Priority: US20140054280P 20140923 US20150209227P 20150824 AU20150320681 20150923
CA20152962076 20150923 JP20170516950T 20150923 EP20150844818 20150923
WO2015US51768 20150923 US20150513126 20150923 CA20182962076 20180619
JP20180126775 20180703 AU20180226484 20180907

Family:	Publication number	Publication date	Application number	Application date
	AU2015320681 AA	20170518	AU20150320681	20150923
	AU2015320681 BB	20190214	AU20150320681	20150923
	AU2018226484 AA	20180927	AU20180226484	20180907
	CA2962076 AA	20170321	CA20152962076	20150923
	CA3008101 AA	20160331	CA20153008101	20150923
	CL2017000680 A1	20180615	CL20170000680	20170322
	CN107249296 A	20171013	CN201580063409	20150923
	CO20170003923 A2	20170831	CO20170003923	20170421
	EA201790694 A1	20170929	EA20170090694	20150923
	EP3197258 A1	20170802	EP20150844818	20150923
	EP3197258 A4	20180620	EP20150844818	20150923
	EP3494767 A1	20190612	EP20180215641	20150923
	ID201800271 A	20180112	ID2017P0004050	20150923
	IN201717014247 A	20170908	IN201717014247	20170421
	JP2017530706 T2	20171019	JP20170516950T	20150923
	JP2019004882 A2	20190117	JP20180126775	20180703
	MX2017003844 A1	20180706	MX20170003844	20150923
	NZ731232 A	20181026	NZ20150731232	20150923
	PE14572017 A1	20171011	PE20170000502	20150923
	US2019116719 AA	20190425	US20150513126	20150923
	WO16049217 A1	20160331	WO2015US51768	20150923
	WO16049217 A4	20160512	WO2015US51768	20150923

Probable Assignee: BIOCARBON ENG LTD

Assignee(s):(std): BIOCARBON ENG LTD ; BIOCARBON ENGINEERING LTD ; FLETCHER LAUREN ; FLETCHER LAUREN E ; GRAHAM SUSAN M ; RITCHIE MATTHEW S ; RITCHIE MATTHEW ; GRAHAM SUSAN ; LAUREN E FLETCHER ; MATTHEW S RITCHIE ; SUSAN M GRAHAM

Assignee(s): BIAN SHUNNING

Inventor(s):(std): GRAHAM SUSAN M ; BIAN SHUNNING ; FLETCHER LAUREN E ; RITCHIE MATTHEW S ; LAUREN E FLETCHER ; MATTHEW S RITCHIE ; SUSAN M GRAHAM ; SHUNNING BIAN

Agent(s): COLLISON AND CO; SMART AND BIGGAR; VENTURELLI SANTA MARIA VALENTINA; HASBLEYDI LIZBETH CALVO ROJAS; J A KEMP; JUANITASARI WINAGA SPD MM; FELD NATHAN L

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8-9): A01B49/06 A01B69/00 A01B69/04 A01B79/00 A01B79/02 A01C11/00 A01C11/02 A01C14/00 A01C21/00 A01C7/08 A01G9/029 B64C27/08 B64C39/02 B64D1/02 B64D1/08 B64D1/16 G05D1/10 (Advanced/Invention)

CPC: B64C2201/12 A01B79/005 A01C21/005 A01G9/0293 B64C39/024 B64C2201/027 B64C2201/128 B64C2201/141 B64D1/08 B64D1/16

US class: 1/1

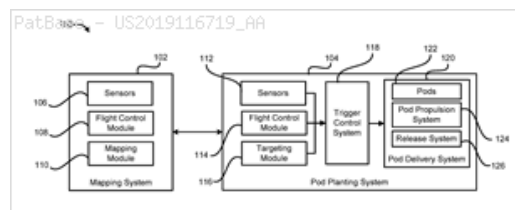
[Classification Explorer](#)

Cited documents: WO14026183 A2, US7779770 BB, US6671582 BA, US6070539 A, US2014165890 AA, US2014035752 AA, US2013068892 AA, US2006230999 AA, US2006213167 AA, JP2014103932 A2, JP2011254711 A2, JP2004213239 A2, JP2001251906 A2, JP2001209427 A2, JP2001120151 A2, JP2000157008 A2, CN203446263 U, CN203446251 U, CN202489007 U,

Forward Citations: WO19046837, WO18191134, WO18033812, US10322803, CN107053178,

Abstract:

Embodiments of the present invention provide techniques, including systems and methods, for planting using planting pods. A planting system can be configured to deliver pods including a payload (e.g., seeds, cuttings, or other planting materials) into or onto the ground at a predetermined location. In some embodiments, the automated planting system can include a mapping system that receives various sensor inputs and generates a map of a planting area. A pod planting system may use the map of the planting area to deliver pods to the planting area. The pod planting system may be executed automatically using the maps generated by the mapping system and/or manually by a remote operator. Each pod can include a payload to be planted on or in the ground by the pod planting system. Pods may be customized depending on the types of plants being planted, the terrain, prior planting results, etc.



Title: FERTILIZATION MAP GENERATING SYSTEM, METHOD FOR THE SAME, INDUSTRIAL HELICOPTER, SERVER, AND CONTROLLED FERTILIZER APPLICATOR

Priority: JP20100129493 20100605

Family:

Publication number	Publication date	Application number	Application date
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Probable Assignee: ZUKOSHA KK

Assignee(s):(std): ZUKOSHA KK

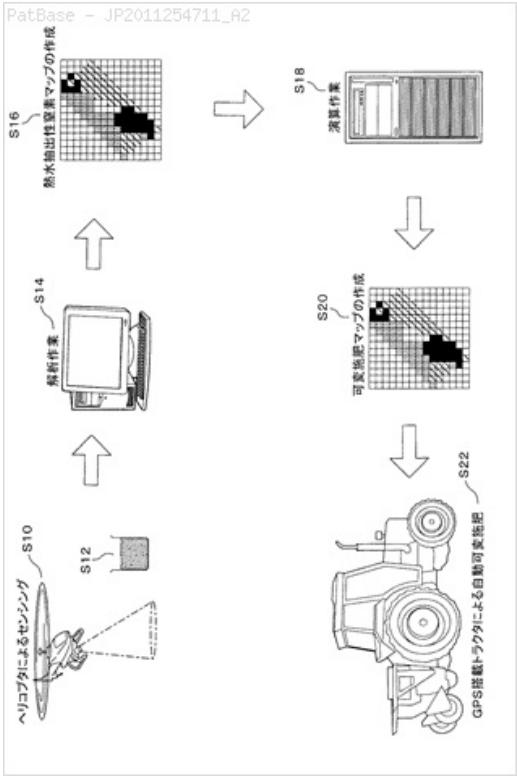
Inventor(s):(std): YOKOBORI JUN ; HOSHIYAMA KENICHI ; ENOMOTO YOSHINORI ; YONEYAMA AKIRA

International class (IPC 8-9): A01C21/00 G06T1/00 (Advanced/Invention)

[Classification Explorer](#)

Forward Citations: WO19004305, WO18180954, WO18109796, WO17170984, KR101578809, JP6544453, JP6474773, JP5935654, JP2018072902, JP2018046787, JP2017530706, JP2014113864, JP2014082958, ES2684843, EP3361217, CN104115602,

Abstract:
 PROBLEM TO BE SOLVED: To carry out adequate and efficient fertilization work by applying fertilizer for every mesh even to a wide farm field.SOLUTION: Various types of sensors mounted on an unmanned industrial helicopter are used to conduct remote sensing (remote searching) of a farm field, to measure the images of soil and the reflectance of natural light. While, soils of the farm field at a few points are sampled for analysis to obtain hot-water extracted nitrogen. Based on remote sensing data and soil sampling data thus obtained, a hot-water extracted nitrogen map is generated. Arithmetic processing is conducted based on the hot-water extracted nitrogen map, crops to be sowed and the data of the fertilization to be used, to generate a fertilization map, for example, per 10 m mesh unit. Based on the generated fertilization map and GPS position information, an automatic controlled fertilizer applicator is automatically controlled to distribute adequate fertilizer for fertilization.



9) Family number: 73827884 (US2019100309A)

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Title: USING UNMANNED AERIAL VEHICLES (UAVS OR DRONES) IN FORESTRY PRODUCTIVITY AND CONTROL APPLICATIONS

Priority: US20170565863P 20170929 US20170812405 20171114 US20170812423 20171114
 US20170812448 20171114

Family:	Publication number	Publication date	Application number	Application date
	BR102018016857 A2	20190424	BR20181016857	20180817
	BR102018068319 A2	20190416	BR20181068319	20180911
	BR102018068327 A2	20190507	BR20181068327	20180911
	CA3015551 AA	20190329	CA20183015551	20180828
	CA3015657 AA	20190329	CA20183015657	20180828
	CA3015779 AA	20190329	CA20183015779	20180829
	US2019100309 AA	20190404	US20170812405	20171114
	US2019100310 AA	20190404	US20170812423	20171114
	US2019102623 AA	20190404	US20170812448	20171114
	US10322803 BB	20190618	US20170812405	20171114

Probable Assignee: DEERE AND CO

Assignee(s):(std): DEERE AND CO

Assignee(s): FLOOD MATTHEW J ; KAHLER ANDREW W ; LAWLER RICHARD ; CHERNEY MARK J

Inventor(s):(std): FLOOD MATTHEW J ; CHERNEY MARK J ; KAHLER ANDREW W ; LAWLER RICHARD ; MATTHEW J FLOOD ; MARK J CHERNEY ; ANDREW W KAHLER ; RICHARD LAWLER

Agent(s): BORDEN LADNER GERVAIS LLP; KELLY JOSEPH R; KELLY HOLT AND CHRISTENSON PLLC

International class (IPC 8-9): A01G23/00 A62C3/02 A62C37/00 B64C2201/123 B64C2201/127 B64C39/02 B64C39/024 B64D47/08 G01C21/04 G01C9/00 G01C9/005 G01V8/00 G05D1/00 G05D1/0022 G05D1/0088 G05D1/10 G06F17/30994 G06K9/00 G06K9/00657 G06Q50/00 G08G5/00 G08G5/0034 H04B7/185 H04B7/26 H04N7/18 (Advanced/Invention)

International class A01G23/00 B64C39/02 G01C21/04 G01C9/00 G05D1/00 G06K9/00 G08G5/00
(IPC 1-7):
CPC: G06K9/00657 G05D1/0022 G05D1/0088 B64C39/024 G01C21/04 G01C9/005 G08G5/0034 B64D47/08 B64C2201/146 B64C2201/127 A01G23/00 B64C2201/123 G06K9/00201 G06K9/3233
US class: 1/1
[Classification Explorer](#)
Cited documents: WO9735433 A1, WO16049217 A1, US2017161972 AA, US2017103263 AA, US2017041978 AA, US2017032509 AA, US2017031365 AA, US2016363932 AA, US2016360562 AA, US2016292626 AA, US2014163781 AA, US2014077969 AA, US2005087110 AA, SE1530146 A1,

Abstract:
A method includes generating an unmanned aerial vehicle (UAV) control signal to fly the UAV over a worksite and capture imagery information at different geographic locations. The imagery information is used to generate a tree inventory metric that indicates a tree inventory at the worksite, or is used to generate a productivity metric that identifies a productivity category for a geographic location at the worksite. The method also generates an action signal based on the tree inventory metric or productivity metric, such as an action signal to deploy machines to different geographic location, or an action signal to update a worksite completion metric.

