

(51) International Patent Classification:
B64C 27/00 (2006.01)(21) International Application Number:
PCT/US2011/000953(22) International Filing Date:
26 May 2011 (26.05.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/396,459 26 May 2010 (26.05.2010) US
61/399,168 7 July 2010 (07.07.2010) US(71) Applicant (for all designated States except US):
AEROVIRONMENT INC. [US/US]; 181 West Hunting-
ton Drive, Suite 202, Monrovia, CA 91016 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **FISHER, Christo-
pher, E.** [US/US]; c/o Aerovironment Inc., 181 West
Huntington Drive, Suite 202, Monrovia, CA 91016 (US).
TOKUMARU, Phillip, T. [US/US]; c/o Aerovironment
Inc., 181 West Huntington Drive, Suite 202, Monrovia,
CA 91016 (US). **SCHMALZEL, Marc, L.** [US/US]; c/o
Aerovironment Inc., 181 West Huntington Drive, Suite
202, Monrovia, CA 91016 (US). **ZWAAN, John, Peter**
[US/US]; c/o Aerovironment Inc., 181 West Huntington
Drive, Suite 202, Monrovia, CA 91016 (US). **TYLER,
Jeremy, D.** [US/US]; c/o Aerovironment Inc., 181 WestHuntington Drive, Suite 202, Monrovia, CA 91016 (US).
MCALLISTER, Justin, B. [US/US]; c/o Aerovironment
Inc., 181 West Huntington Drive, Suite 202, Monrovia,
CA 91016 (US). **TORRES, Gabriel** [PE/US]; c/o
Aerovironment Inc., 181 West Huntington Drive, Suite
202, Monrovia, CA 91016 (US). **BELIK, Pavel**
[CZ/US]; c/o Aerovironment Inc., 181 West Huntington
Drive, Suite 202, Monrovia, CA 91016 (US).(74) Agent: **GRIECCI, John, A.**; THE LAW OFFICE OF
JOHN A. GRIECCI, 703 Pier Avenue, Suite B #657, Her-
mosa Beach, CA 90254 (US).(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ,
CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO,
DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,
KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD,
SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR,
TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG,
ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ,
TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK,
EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,

[Continued on next page]

(54) Title: RECONFIGURABLE BATTERY-OPERATED VEHICLE SYSTEM

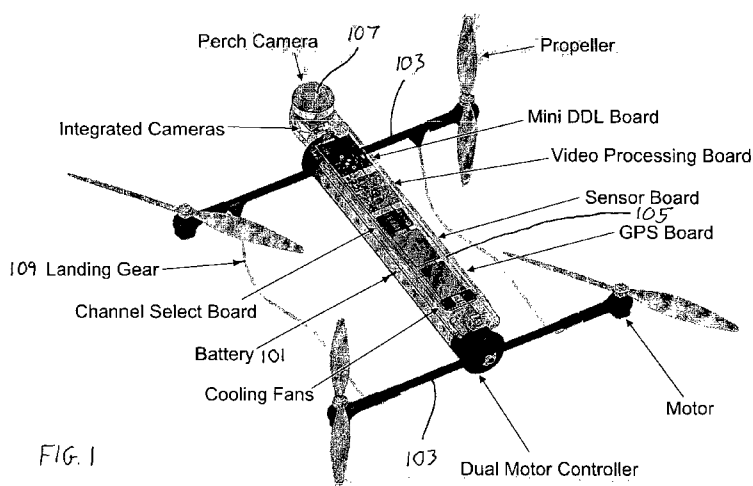


FIG. 1

(57) Abstract: A quadrotor UAV including ruggedized, integral-battery, load-bearing body, two arms on the load-bearing body, each arm having two rotors, a control module mounted on the load-bearing body, a payload module mounted on the control module, and skids configured as landing gear. The two arms are replaceable with arms having wheels for ground vehicle use, with arms having floats and props for water-surface use, and with arms having pitch-controlled props for underwater use. The control module is configured to operate as an unmanned aerial vehicle, an unmanned ground vehicle, an unmanned (water) surface vehicle, and an unmanned underwater vehicle, depending on the type of arms that are attached.



LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, **Published:**

SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, — *with international search report (Art. 21(3))*
GW, ML, MR, NE, SN, TD, TG).