



- (51) International Patent Classification:

B62D 37/02 (2006.01)	B60W 40/12 (2006.01)
B60W 50/06 (2006.01)	B62D 35/00 (2006.01)
- (21) International Application Number:
PCT/US2012/045830
- (22) International Filing Date:
6 July 2012 (06.07.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:

61/505,076	6 July 2011 (06.07.2011)	US
13/542,627	5 July 2012 (05.07.2012)	US
13/542,622	5 July 2012 (05.07.2012)	US
- (71) Applicant (for all designated States except US): **PELTON TECHNOLOGY INC.** [US/US]; 965 Roble Avenue, Menlo Park, CA 94025 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **SWITKES, Joshua, P.** [US/US]; 965 Roble Avenue, Menlo Park, CA 94025 (US). **GERDES, Joseph, Christian** [US/US]; 141 Del Monte Avenue, Los Altos, CA 94022 (US). **BERDICHEVSKY, Gene** [US/US]; 21 Martinez Road, Woodside, CA 94062 (US).
- (74) Agent: **LIM, Kang, S.**; 2491 San Ramon Valley Blvd. #1-229, San Ramon, CA 94583 (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, QA, RO, RS, RU, RW, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

- Published:
 - with international search report (Art. 21(3))
 - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))
- (88) Date of publication of the international search report:
21 March 2013

(54) Title: SYSTEMS AND METHODS FOR SEMI-AUTONOMOUS VEHICULAR CONVOYING

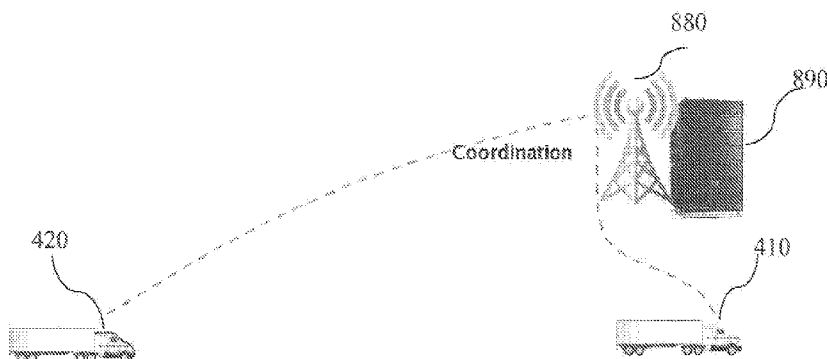


Figure 8: Long range coordination system

(57) Abstract: The present invention relates to a system and method for enabling vehicles to closely follow one another through partial automation. Following closely behind another vehicle has significant fuel savings benefits, but is unsafe when done manually by the driver. On the opposite end of the spectrum, fully autonomous solutions require inordinate amounts of technology, and a level of robustness that is currently not cost effective. It is therefore apparent that an urgent need exists for reliable and economical Semi-Autonomous Vehicular Convoying. These improved Semi-Autonomous Vehicular Convoying Systems enable vehicles to follow closely together in a safe, efficient and convenient manner.



A. CLASSIFICATION OF SUBJECT MATTER*B62D 37/02(2006.01)i, B60W 50/06(2006.01)i, B60W 40/12(2006.01)i, B62D 35/00(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B62D 37/02; B60W 10/04; G06F 17/00; B60Q 1/00; G01C 21/00; B60W 30/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: lead, follow, vehicle, convoy

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y A	US 7593811 B2 (SCHMIDT, MARK ALVIN et al.) 22 September 2009 See column 2, line 13-column 3, line 56 and figure 1A.	1,3,4,40,41 2 5-39,42-51
Y A	US 7554435 B2 (TENGLER, STEVE et al.) 30 June 2009 See column 3, line 56-column 4, line 34, column 9, line 60-column 10, line 8, column 13, line 38-column 14, line 1 and figures 1-4.	5-9,23-28,42-51 1-4,10-22,29-41
Y A	US 2006-0095195 A1 (NISHIMURA, TAKAO et al.) 04 May 2006 See paragraphs [0023],[0025],[0049],[0054],[0059] and figures 1-2.	5-9,23-28,42-51 1-4,10-22,29-41
Y A	JP 2010-030525 A (TOYOTA MOTOR CORP.) 12 February 2010 See abstract and figure 1.	2 1,3-51

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

21 DECEMBER 2012 (21.12.2012)

Date of mailing of the international search report

07 JANUARY 2013 (07.01.2013)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
189 Cheongsu-ro, Seo-gu, Daejeon Metropolitan
City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

LIM, Hae Young

Telephone No. 82-42-481-5518



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/045830

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 7593811 B2	22.09.2009	DE 602006011665 D1 EP 1708065 A2 EP 1708065 A3 EP 1708065 B1 US 2006-0229804 A1	04.03.2010 04.10.2006 16.05.2007 13.01.2010 12.10.2006
US 7554435 B2	30.06.2009	US 2008-0122652 A1	29.05.2008
US 2006-0095195 A1	04.05.2006	JP 2006-131055 A	25.05.2006
JP 2010-030525 A	12.02.2010	None	