(51) International Patent Classification:
G06F 3/01 (2006.01)

(21) International Application Number:
PCT/US20 14/024852

(22) International Filing Date:
12 March 2014 (12.03.2014)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
13/835,252 15 March 2013 (15.03.2013) US
13/834,007 15 March 2013 (15.03.2013) US


(71) Applicant (for US only): EDGE 3 TECHNOLOGIES LLC [US/US]; 2535 E. Glenrosa Avenue, Phoenix, AZ 85016 (US).

(72) Inventor: and


(72) Inventor (for US only): EL DOKOR, Tarek, A.; c/o Edge 3 Technologies LLC, 2535 E. Glenrosa Avenue, Phoenix, AZ 85016 (US).

(72) Inventors: CLUSTER, Jordan; c/o Edge 3 Technologies LLC, 2535 E. Glenrosa Avenue, Phoenix, AZ 85016 (US).

HOLMES, James, E.; c/o Edge 3 Technologies LLC, 2535 E. Glenrosa Avenue, Phoenix, AZ 85016 (US).

YAMAMOTO, Stuart, M.; c/o Honda Patents & Technologies North America, LLC, 21001 State Route 739, Raymond, OH 43067-9705 (US).

(74) Agents: MCNELIS, John, T. et al: Fenwick & West LLP, Silicon Valley Center, 801 California Street, Mountain View, CA 94041 (US).


(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, RD, SL, SZ, TG, 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, LT, LT, LU, LV,

(54) Title: SYSTEMS AND METHODS FOR VEHICLE USER INTERFACE

[Continued on next page]
— 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))

Published: (88) Date of publication of the international search report: 13 November 2014

— with international search report (Art. 21(3))
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - G06F 3/01 (2014.01)
USPC - 715/863

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)

IPC(8) - G06F 3/01, 3/048 (2014.01)
USPC - 715/700, 863

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

CPC - G06F 3/017; 2203/0381 (2014.02)

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

PatBase, Google Patents, Google

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 2013/003081 1 A1 (OLLEON et al) 31 January 2013 (31.01.2013) entire document</td>
<td>1,2,6,7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3,5,8,9</td>
</tr>
<tr>
<td>A</td>
<td>US 5,948,040 A (DELOMME et al) 07 September 1999 (07.09.1999) entire document</td>
<td>1-9</td>
</tr>
</tbody>
</table>

Further documents are listed in the continuation of Box C.

Date of the actual completion of the international search
03 September 2014

Date of mailing of the international search report
24 SEP 2014

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Authorized officer: Blaine R. Copenheaver
PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (July 2009)
### Box No. II  Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
   - because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
   - because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
   - because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box No. III  Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See last page.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

   1-9

### Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☐ No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (July 2009)
This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-9, drawn to a vehicle-based computer-implemented method for retrieving information associated with a point of interest (POI).

Group II, claims 10-20, drawn to a vehicle-based computer-implemented method for controlling a component of the vehicle.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention: a vehicle-based computer-implemented method for retrieving information associated with a point of interest (POI); the identifying gesture oriented in a direction and identifying an object exterior to the vehicle; performing gesture recognition on the data signal to determine a direction vector representing the direction of the identifying gesture; accessing location data identifying a current location and orientation of the vehicle; analyzing the direction vector and the location data to generate a target region corresponding to the object identified by the identifying gesture; retrieving information associated with one or more points of interest located in the target region; and providing the retrieved information to the user, the retrieved information including information associated with the object identified by the identifying gesture as claimed therein is not present in the invention of Group II. The special technical feature of the Group II invention: vehicle-based computer-implemented method for controlling a component of the vehicle; identifying a first component of the vehicle based on a first selecting input performed by the user within the vehicle; performing gesture recognition on the first data signal to determine a first command for controlling the first identified component; identifying a second component of the vehicle based on a second selecting input performed by the user within the vehicle, the second identified component different from the first identified component; receiving a second data signal representing the same gesture performed by the user in the same capture region within the vehicle; and performing gesture recognition on the second data signal to determine a second command for controlling the second identified component, the second command different from the first command as claimed therein is not present in the invention of Group I.

Groups I and II lack unity of invention because even though the inventions of these groups require the technical feature of receiving, at a computing system, a data signal representing an identifying gesture performed by a user inside a vehicle and performing gesture recognition, this technical feature is not a special technical feature as it does not make a contribution over the prior art. Specifically, US 2013/0030811 A1 (OLLEON et al) 31 January 2013 (31.01.2013) teaches receiving, at a computing system, a data signal representing an identifying gesture performed by a user inside a vehicle (camera or cameras can be used to perform gesture sensing such as arm movements made by the driver as in the act of pointing to a particular object outside the vehicle, [0015]) and performing gesture recognition (disambiguation processor 46 correlates gestures the driver has made with visible objects external to the vehicle such as a point of interest being pointed to by the user, [0021]).

Since none of the special technical features of the Group I or II inventions are found in more than one of the inventions, unity of invention is lacking.