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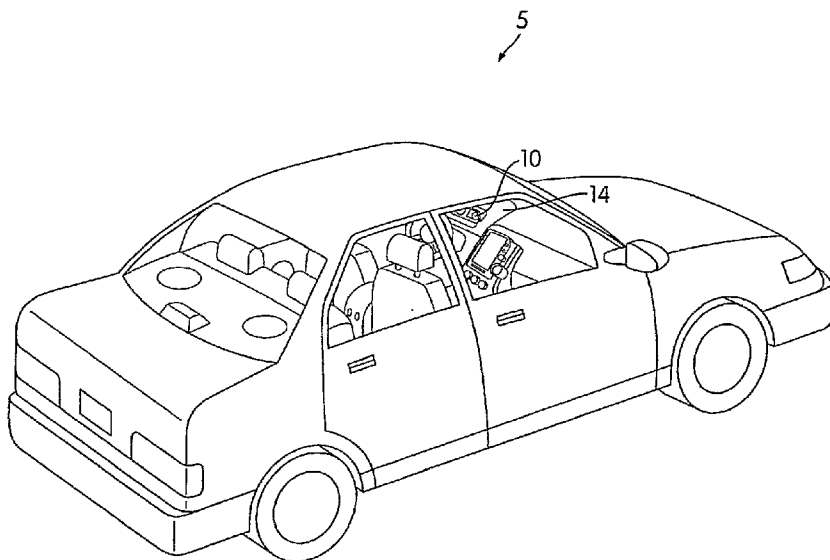
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(54) Title: RECONFIGURABLE INSTRUMENT CLUSTER



(57) Abstract: Provided are several reconfigurable instrument clusters for instrument panels in an automotive vehicle. Instrument cluster comprises a value indicia (60) configured to indicate a value of a plurality of vehicle data (72, 74) and an applique comprising first and second indicia (22,24,26,28,30,32,40,42,44,46,48). A control circuit (80) is configured to receive first and second vehicle data from different data sources and further configured to control the value indicia (.60) and first indicia (22,24,26,28,30,32) to indicate the first vehicle data (74) and, in response to a signal, to control the value indicia (60) and second indicia (40, 42,44, 46, 48) to indicate the second vehicle data (72).

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/000241

A. CLASSIFICATION OF SUBJECT MATTER
INV. B60K35/00 G01D11/28 G01D13/26

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)
B60K G01D B60Q

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

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

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	WO 2007/048140 A (SIEMENS VDO AUTOMOTIVE CORP. [US]; TAKATO KENICHI [US]) 26 April 2007 (2007-04-26) page 5, lines 6-16; figures	1,2
P,X	WO 2006/041876 A (JOHNSON CONTROLS TECH CO [US]; EICH RODGER W [US]; HOTARY JAMES T [US]) 20 April 2006 (2006-04-20) paragraphs [0012] - [0014], [0028] - [0031], [0034], [0035]; figure 5	1,2
X	US 4 777 480 A (OKAMOTO KEIJI [JP] ET AL) 11 October 1988 (1988-10-11) column 3, lines 19-25 column 4, lines 5-22 figures 3-8	1,2

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 document 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 another 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

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INTERNATIONAL SEARCH REPORT

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 25 57 238 A1 (VDO SCHINDLING) 30 June 1977 (1977-06-30) the whole document -----	1,2
X	US 2003/221606 A1 (QUIGLEY JON [US] ET AL) 4 December 2003 (2003-12-04)	1
A	paragraphs [0039] - [0042], [0050]; figures 6,11a,12 -----	2
A	US 2003/210538 A1 (TAMURA SATORU [JP]) 13 November 2003 (2003-11-13)	1
X	paragraphs [0023] - [0028], [0042] - [0052]; figures 2b,3,4 -----	2

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2007/000241

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 additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.
2. As all searchable claims could be searched without effort justifying an 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.:

1-2

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-2

An instrument cluster for use in a passenger vehicle comprises a control circuit which controls in response to a signal.

1.1. claim: 1

A control circuit controls first indicia and the value of first vehicle data on an instrument cluster applique, and, in response to a signal, second indicia and the value of second vehicle data.

Problem: switch from first instrument display mode to second instrument display mode on same applique.

1.2. claim: 2

A control circuit sequentially illuminates a plurality of light sources coupled to a light channel of an instrument cluster, based on their respective locations.

Problem: switch between various lights sources of an instrument cluster.

2. claim: 3

A control circuit controls a light source and a reconfigurable display of an instrument cluster to illustrate, in response to a signal, the corresponding indicia on the applique and the message corresponding to said indicia on the display.

Problem: switch between indicia and show corresponding message.

3. claim: 4

A hub with non-protruding value indicia is controlled to rotated relative to the scale of an instrument cluster board:

Problem: value indicia arrangement and control of its rotation.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2007/000241

Patent document cited in search report	Publication date	Publication date	Patent family member(s)	Publication date
WO 2007048140	A	26-04-2007	NONE	
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