Abstract: A transaxle (200) operatively connects a first associated rotational connection and a second associated rotational connection with an associated vehicle axle. An electrically-variable transmission includes an engine (108), a first electric machine (110) operatively connected to the engine, second and third electric machines (130 and 132), a first transaxle (126) operatively connecting the engine and second electric machine to an associated vehicle axle (104A), and a second transaxle (128) operatively connecting the first and third electric machines to another associated vehicle axle (104B). A method (300, 400, 500) is also included.
Published: with international search report

(88) Date of publication of the international search report:
29 March 2007

For two-letter codes and other abbreviations, refer to the “Guidance Notes on Codes and Abbreviations” appearing at the beginning of each regular issue of the PCT Gazette.
# Search Report

## A. CLASSIFICATION OF SUBJECT MATTER

**INV.** F16H 48/08  B66K 6/04

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)

B66K  F16H

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

Electronic database consulted during the International search (name of database and, where practical, search terms used)

EP0-Internal

## 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>A</td>
<td>US 6 729 991 B1 (NISHIJI MAKOTO ET AL) 4 May 2004 (2004-05-04) column 5, lines 10-60 figures 1,3</td>
<td>1-4</td>
</tr>
<tr>
<td>A</td>
<td>DE 32 21 606 A1 (VOLKSWAGENWERK AG) 15 December 1983 (1983-12-15) page 5, lines 1-30 figure 1</td>
<td>1-4</td>
</tr>
</tbody>
</table>

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

**I** 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**

14 September 2006

**Date of mailing of the international search report**

8 JAN 2007

Name and mailing address of the ISA/

European Patent Office, P.O. 5818 Patentlaan 2 NL - 2280 HV Rijswijk
Tel. (+31-70) 940-2040, Tx. 31 651 epo nl, Fax: (+31-70) 940-3016

Authorized officer

Verdelho, Luis
<table>
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<th>Publication date</th>
<th>Patent family member(s)</th>
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<tr>
<td></td>
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<td>EP 1501695 A2</td>
<td>02-02-2005</td>
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<td>WO 03093046 A2</td>
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<td>DE 3221606 A1</td>
<td>15-12-1983</td>
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</table>
Box 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 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 all searchable claims.

2. [ ] As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

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. [X] 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.:

1-4

Remark on Protest

[ ] The additional search fees were accompanied by the applicant’s protest.

[ ] No protest accompanied the payment of additional search fees.
This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-4

   a vehicle transaxle with two drive sources and comprising housing and plurality of gears

2. claims: 5-20

   a vehicle hybrid transmission with an engine and three electric machines providing a four wheel drive mode