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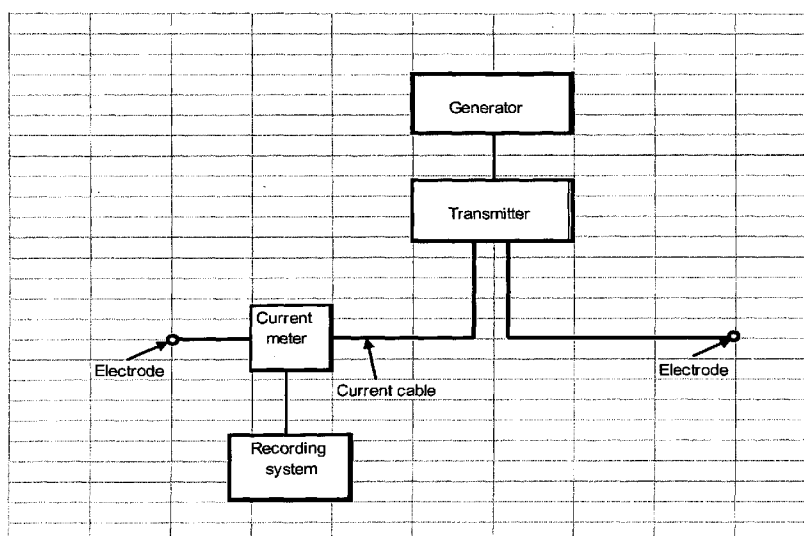
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(54) Title: TRUE AMPLITUDE TRANSIENT ELECTROMAGNETIC SYSTEM RESPONSE MEASUREMENT



(57) Abstract: A method for mapping sub-surface resistivity contrasts comprising making multi-channel transient electromagnetic (MTEM) measurements using at least one electric source with grounded input current electrodes or one magnetic source with current in a wire loop or multi loop and at least one electric field or magnetic field receiver, measuring the resultant earth response simultaneously at each receiver using a known recording system, measuring the system response by measuring directly the current in the wire at the source using effectively the same recording system, using the measured system response to recover the impulse response of the earth from each measured earth response, and creating from such impulse responses a sub-surface representation of resistivity contrasts.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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.

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INTERNATIONAL SEARCH REPORT

International application No

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A. CLASSIFICATION OF SUBJECT MATTER
INV. G01V3/12

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)
G01V

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, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 03/023452 A (THE UNIVERSITY COURT OF THE UNIVERSITY OF EDINBURGH; WRIGHT, DAVID, AL) 20 March 2003 (2003-03-20) cited in the application page 2, line 46 - line 50 page 5, line 24 - line 32 page 8, line 12 - line 17 claim 2	1-18
Y	US 4 417 210 A (ROCROI ET AL) 22 November 1983 (1983-11-22) column 2, line 56 - line 68 column 7, line 58 - column 8, line 64 column 11, line 51 - column 12, line 52	1-18
A	WO 2004/072684 A (SOERENSEN, KURT, I) 26 August 2004 (2004-08-26) ----- -/--	

☒ 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

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- *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
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- *G* document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No
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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.
A	US 5 467 018 A (RUTER ET AL) 14 November 1995 (1995-11-14) -----	
A	US 4 710 708 A (RORDEN LOUIS H [US] ET AL) 1 December 1987 (1987-12-01) column 28, line 40 - line 52 -----	19

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2005/004773

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. ☐ 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.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ 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: 1-18

Method and system for mapping subsurface resistivity.

2. claim: 19

Method for checking the correctness of an earth impulse response estimate.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2005/004773

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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