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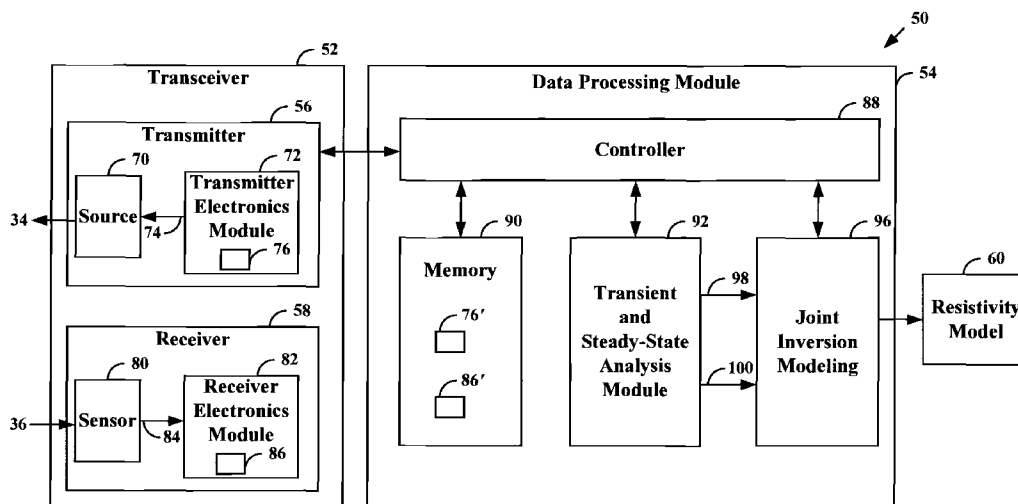
AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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(54) Title: METHODS AND APPARATUS FOR SUBSURFACE GEOPHYSICAL EXPLORATION USING JOINT INVERSION OF STEADY-STATE AND TRANSIENT DATA



(57) Abstract: Methods and apparatus are provided for controlled source electromagnetic surveying. In particular, a time-varying electromagnetic signal is transmitted at a first location, and an electromagnetic signal responsive to the transmitted signal is received at a second location, wherein the received signal includes a transient response component and a steady-state component. The received signal is continuously recorded during a predetermined time interval, and data corresponding to the transient response component and the steady-state component are extracted from the received signal. The transient response data and the steady-state response data are jointly inverted to identify a subsurface feature, such as resistivity.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. G01V3/12 G01V3/38

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.
X	GB 2 410 090 A (SCHLUMBERGER HOLDINGS, [VG]) 20 July 2005 (2005-07-20) page 3, last paragraph - page 4, paragraph 2 page 9, last paragraph - page 10, paragraph 3 page 17, paragraph 3 - page 21, paragraph 2; claim 1; figures 3-5	1-10
A	GOMEZ-TREVINO E ET AL: "Electromagnetic soundings in the sedimentary basin of southern Ontario-a case history" GEOPHYSICS USA, vol. 48, no. 3, March 1983 (1983-03), pages 311-330, XP002498850 ISSN: 0016-8033 page 312, right-hand column, last paragraph - page 314, left-hand column, paragraph 1	1,5,10

Further documents are listed in the continuation of Box C.

See patent family annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2410090	A	NONE	