

(51) International Patent Classification:
G06F 15/173 (2006.01)

(21) International Application Number:

PCT/US2011/028350

(22) International Filing Date:

14 March 2011 (14.03.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/346,298 19 May 2010 (19.05.2010) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,

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(54) Title: METHOD AND SYSTEM FOR CHECKPOINTING DURING SIMULATIONS

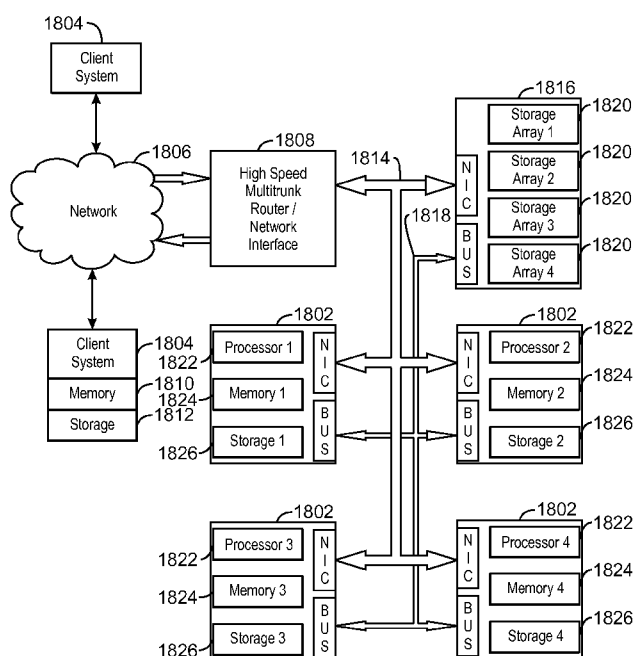


FIG. 18

(57) Abstract: Method and system for more efficient checkpointing strategy in cross correlating (316) a forward (328) and backward (308) propagated wave such as in migrating (326) or inverting seismic data. The checkpointing strategy includes storing in memory forward simulation data at a checkpointed time step, wherein the stored data are sufficient to do a cross correlation at that time step but not to restart the forward simulation. At other checkpoints, a greater amount of data sufficient to restart the simulation may be stored in memory (314). Methods are disclosed for finding an optimal combination, i.e. one that minimizes computation time (1132), of the two types of checkpoints for a given amount of computer memory (1004), and for locating a checkpoint at an optimal time step (306, 1214, 1310). The optimal checkpointing strategy (1002) also may optimize (1408) on use of fast (1402) vs. slow (1404) storage.



SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

— *as to the applicant's entitlement to claim the priority of
the earlier application (Rule 4.17(iii))*

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii))*

Published:

— *with international search report (Art. 21(3))*