

(51) International Patent Classification:
G06F 7/487 (2006.01) **G06F 9/38** (2006.01)veta Vitalievna et al., B. Spasskaya str., 25, bldg. 3,
Moscow, 129090 (RU).(21) International Application Number:
PCT/RU2009/000727(22) International Filing Date:
25 December 2009 (25.12.2009)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **INTEL CORPORATION** [US/US]; 2200 Mission College Blvd., M/S: RNB4-150, Santa Clara, California 95052 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KOLESOV, Andrey Ivanovich** [RU/RU]; Rodionova St., 188-61, Nizhniy Novgorod, 603126 (RU). **KURIAKIN, Valery Fedorovich** [RU/RU]; B. Kornilov Str., 2-59, Nizhny Novgorod, 603106 (RU). **GUSEVA, Maria Valerievna** [RU/RU]; 2nd Micr., 20, 80, Kstovo, Nizhegorodskaya obl., 607650 (RU).(74) Agent: **LAW FIRM "GORODISSKY & PARTNERS" LTD.**; MITS Alexander Vladimirovich, POPOVA Eliza-

(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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

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

(54) Title: FAST BRANCH-FREE VECTOR DIVISION COMPUTATION

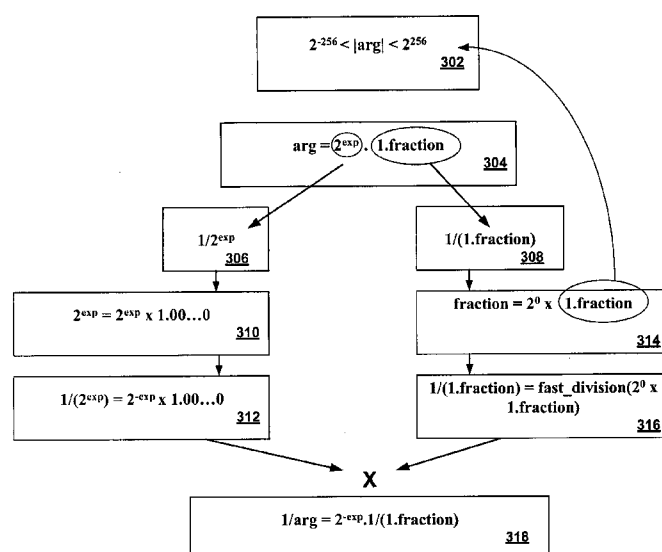


FIG. 3

(57) Abstract: Methods and apparatus for double precision division/inversion vector computations on Single Instruction Multiple Data (SIMD) computing platforms are described. In one embodiment, an input argument is represented by an exponent portion and a fraction portion. The fraction portions are scaled, inverted, and multiplied to generate an inverse version of the input argument. In an embodiment, the inversion of the exponent portion may be done by changing the sign of the exponent. Other embodiments are also described.