

(51) International Patent Classification:
G06T 17/05 (2011.01)

(21) International Application Number:

PCT/US2013/075084

(22) International Filing Date:

13 December 2013 (13.12.2013)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/909,843 27 November 2013 (27.11.2013) 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, BN, 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, IR, IS, JP, KE, KG, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, 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, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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, SM,

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(54) Title: GEOCELLULAR MODELING

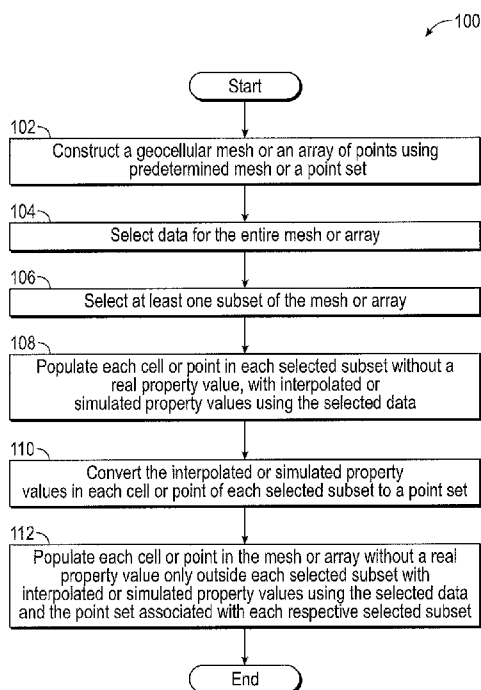


FIG. 1

(57) **Abstract:** Systems and methods for geocellular modeling a subset of a geocellular mesh or an array of points that is used to construct a geocellular model of the entire geocellular mesh or array of points. In one embodiment, the present disclosure includes a method for geocellular modeling, comprising: populating one of each cell and each point without a real property value in each subset selected from a respective one of a geocellular mesh and an array of points with one of an interpolated property value and a simulated property value using all data from one of the geocellular mesh and the array of points; converting one of the interpolated property value and the simulated property value in each one of the cell and the point in each selected subset to a point set using a computer processor; and populating one of each cell and each point without a real property value in the respective one of the geocellular mesh and the array of points only outside each selected subset with one of an interpolated property value and a simulated property value using the data and the point set associated with each respective selected subset.

WO 2015/080753 A1



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

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