



- (51) **International Patent Classification:**
H04N 13/00 (2006.01) *G06T 15/00* (2011.01)
- (21) **International Application Number:**
PCT/US2012/058417
- (22) **International Filing Date:**
2 October 2012 (02.10.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/543,531 5 October 2011 (05.10.2011) US
- (71) **Applicant:** BITANIMATE, INC. [US/US]; 5 Centerpointe Drive, Suite 400, Lake Oswego, OR 97035 (US).
- (72) **Inventors:** MALEKI, Behrooz; 5 Centerpointe Drive, Suite 400, Lake Oswego, OR 97035 (US). SARKHOSH, Sarvenaz; 5 Centerpointe Drive, Suite 400, Lake Oswego, OR 97035 (US).
- (74) **Agents:** ISRAESEN, R., Burns et al.; Maschoff Gilmore & Israelsen, 1441 West Ute Boulevard, Suite 100, Park City, UT 84098 (US).
- (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, 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, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, 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, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

(54) **Title:** RESOLUTION ENHANCED 3D VIDEO RENDERING SYSTEMS AND METHODS

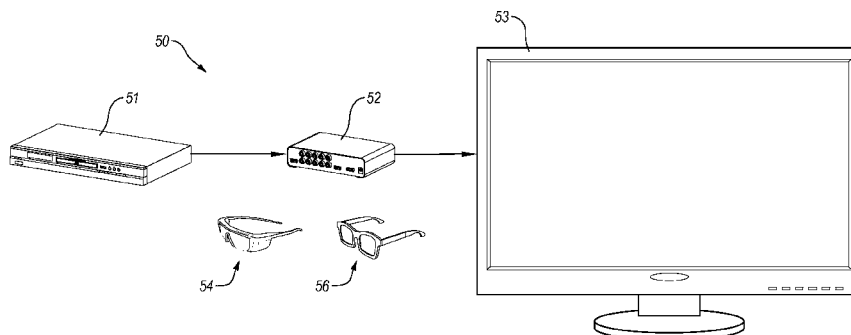


Fig. 5

(57) **Abstract:** Systems and methods are provided for rendering 3D images or video without significantly losing resolution or increasing the resolution. The systems and methods for 3D rendering technology can work with different types of 3D data frames that include left eye image and right eye image sub-frames. The 3D data frames render 3D imagery with side-by-side (SXS), top-and-bottom (TB), and frame packing (FP), as well as others such as full high definition 3D (FHD3D), frame sequential 3D, passive 3D rendering or the like. System and methods are provided for creating inverse pixel strips, and preparing 3D images that include the inverse pixel strips. Systems and methods are provided for expanding images in a plane without significant loss of resolution.

