

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
23 June 2005 (23.06.2005)

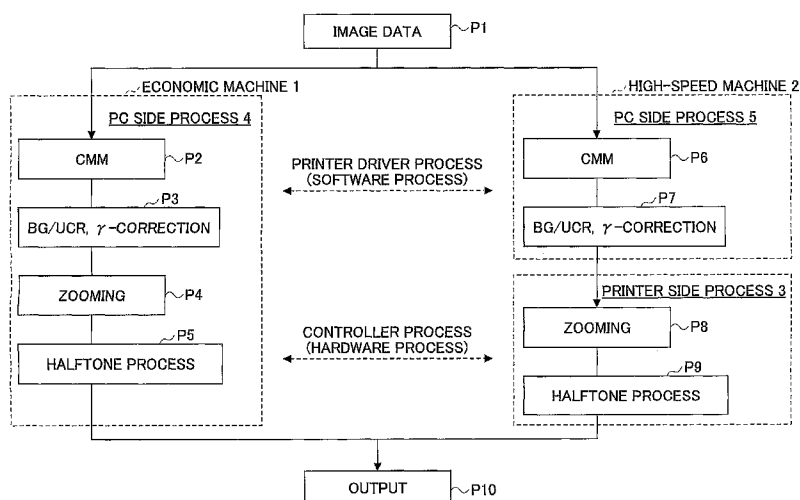
PCT

(10) International Publication Number
WO 2005/057911 A1

- (51) International Patent Classification⁷: **H04N 1/60**
- (21) International Application Number:
PCT/JP2004/018100
- (22) International Filing Date:
30 November 2004 (30.11.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2003-408439 8 December 2003 (08.12.2003) JP
- (71) Applicant (for all designated States except US): **RICOH COMPANY, LTD.** [JP/JP]; 3-6, Nakamagome 1-chome, Ohta-ku, Tokyo, 1438555 (JP).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **HIRANO, Masanori** [JP/JP]; 1253-7, Shimoogino, Atsugi-shi, Kanagawa, 2430203 (JP).
- (74) Agent: **ITOH, Tadahiko**; 32nd Floor, Yebisu Garden Place Tower, 20-3, Ebisu 4-chome, Shibuya-ku, Tokyo, 1506032 (JP).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, 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, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report

[Continued on next page]

(54) Title: IMAGE PROCESSING METHOD AND APPARATUS, IMAGE FORMING APPARATUS AND SYSTEM, PROGRAM AND RECORDING MEDIUM



(57) Abstract: Recording data is produced from first image data corresponding to each pixel with a first number of gradations so as to be supplied to a recording apparatus, which expresses each pixel with a number of gradations smaller than the first number of gradations. Second image data is produced by converting the first image data into a color space that can be output by the recording apparatus. Third image data is produced based on a second number of gradations of the second image data so that the third image data has a third number of gradations. The recording data is produced by applying a halftone process to the third image data. The third number of gradations of the third image data is adjusted to be equal to or larger than the second number of gradations of the second image data in accordance with a number of colors for each pixel used in the second image data.

WO 2005/057911 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.