

CORRECTED VERSION

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
10 May 2012 (10.05.2012)



(10) International Publication Number
WO 2012/061325 A9

(51) International Patent Classification:
H04B 7/216 (2006.01)

(21) International Application Number:
PCT/US2011/058663

(22) International Filing Date:
31 October 2011 (31.10.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/917,257 1 November 2010 (01.11.2010) US

(71) Applicant (for all designated States except US):
REARDEN, LLC [US/US]; 355 Bryant Street, Suite 110,
San Francisco, CA 94107 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **FORENZA, Antonio**
[IT/US]; 355 Bryant Street, Suite 110, San Francisco, CA
94107 (US). **LINDSKOG, Erik** [SE/US]; 355 Bryant
Street, Suite 110, San Francisco, CA 94107 (US). **PERL-
MAN, Stephen, G.** [US/US]; 355 Bryant Street, Suite 110,
San Francisco, CA 94107 (US).

(74) Agents: **VINCENT, Lester, J.** et al.; Blakely, Sokoloff,
Taylor & Zafman LLP, 1279 Oakmead Parkway,
Sunnyvale, CA 94085-4040 (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, 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, 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, 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,
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))

(48) Date of publication of this corrected version:

13 June 2013

(15) Information about Correction:

see Notice of 13 June 2013

(54) Title: SYSTEMS AND METHODS TO COORDINATE TRANSMISSIONS IN DISTRIBUTED WIRELESS SYSTEMS VIA USER CLUSTERING

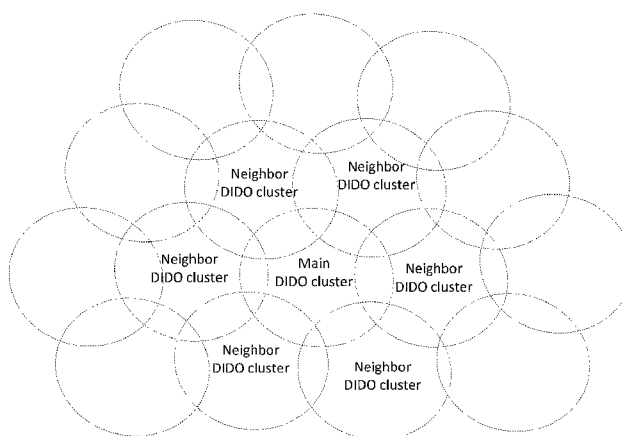


Fig. 1

(57) Abstract: Systems and methods are described for coordinating transmissions in distributed wireless systems via user clustering. For example, a method according to one embodiment of the invention comprises: measuring link quality between a target user and a plurality of distributed-input distributed-output (DIDO) distributed antennas of base transceiver stations (BTSs); using the link quality measurements to define a user cluster; measuring channel state information (CSI) between each user and each DIDO antenna within a defined user cluster; and precoding data transmissions between each DIDO antenna and each user within the user cluster based on the measured CSI.