

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

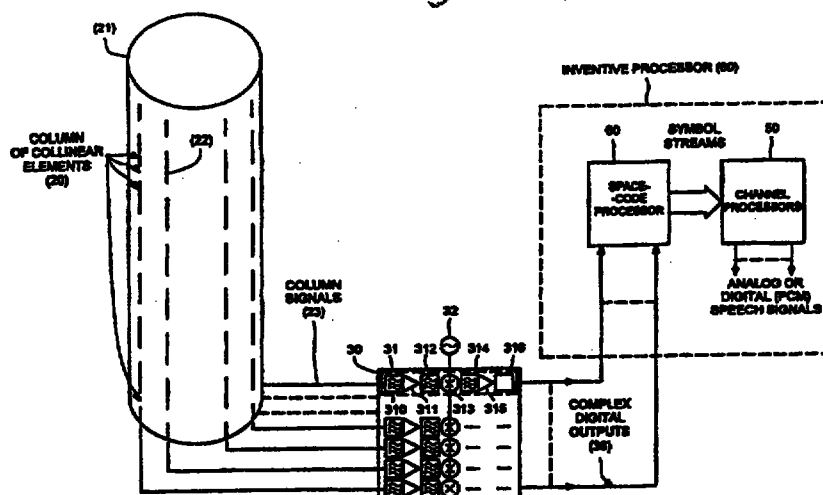
(51) International Patent Classification 6: H04B 7/26	A1	(11) International Publication Number: WO 98/10537
		(43) International Publication Date: 12 March 1998 (12.03.98)

(21) International Application Number: **PCT/US97/14085**(22) International Filing Date: **12 August 1997 (12.08.97)**(30) Priority Data:
08/706,493 **4 September 1996 (04.09.96)** **US**(71) Applicant: **ERICSSON INC. [US/US]; 7001 Development Drive, P.O. Box 13969, Research Triangle Park, NC 27709 (US).**(72) Inventor: **DENT, Paul, W.; 637 Eagle Point Road, Pittsboro, NC 27312 (US).**(74) Agents: **GRUDZIECKI, Ronald, L. et al.; Burns, Doane, Swecker & Mathis, L.L.P., P.O. Box 1404, Alexandria, VA 22313-1404 (US).**

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published

With international search report.

(54) Title: **COMBINED SUBTRACTIVE INTERFERENCE CANCELLATION AND SPACE DIVERSITY SIGNAL PROCESSING IN A CELLULAR CDMA COMMUNICATIONS SYSTEM**

(57) Abstract

A communications system is disclosed comprising a plurality of mobile stations and an improved base station for receiving signals from said mobile stations and decoding information-bearing signals transmitted therefrom. An antenna comprising antenna elements disposed around a support structure receives signals transmitted from the plurality of mobile stations and generates output signals from each antenna element. Convertors amplify, filter and convert signals from each of the antenna elements into a corresponding number of converted signals for processing. Storage devices temporarily store a number of samples of the converted signals. Processors iteratively process and reprocess the stored samples successively to decode the information from each of the mobile stations in turn. The processing provided by the processors identifies from the stored samples an information symbol transmitted by one of the mobile stations thereby decoding the information-bearing signal, and subtracts values dependent on the identified information symbol from the stored samples thereby reducing interference between the just-decoded signal and the signal to be decoded at a subsequent iteration.