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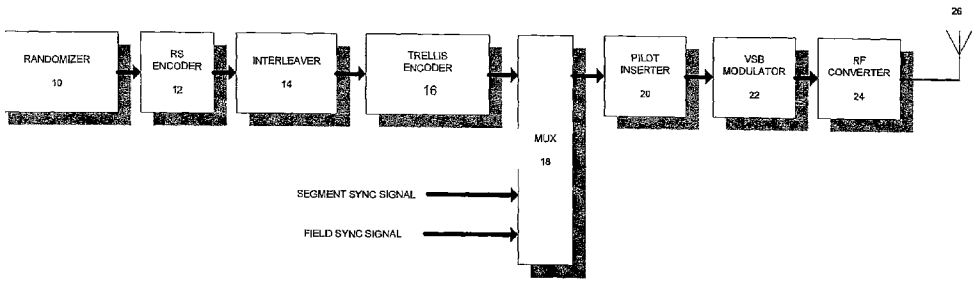

FIGURE 1

(57) Abstract: The presence of an incumbent signal is detected in order to allow secondary users to share spectrum white space with incumbent users who have pre-emptive access to the spectrum. The spectrum is relinquished to the incumbent user to preclude any potential harmful interference and enable spectrum sharing. The presence of an incumbent signal (39) is detected by performing a frequency domain transformation on a received signal (51) to generate a plurality of frequency-domain components (53). A maximum frequency domain component is identified from among the plurality of frequency-domain components (53). The identified maximum frequency domain component is squared, and the result is compared to a detection threshold value to determine if the incumbent signal is present.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. H04B1/10

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B. FIELDS SEARCHED

Minimum documenlalion searched (classification system followed by classification symbols)
H04B H04L

Documenlalion searched other lhan minimum documentation lo the extent that such documents are included in the fields searched

Electronic dala base consulted during lhe international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category"	Citation ot document, wilh indication, where appropriate of the relevant passages	Relevant Io claim No
X	NING HAN ET AL: "Spectral correlation based signal detection method for spectrum sensing in IEEE 802.22 WRAN systems" IEEE INTERNATIONAL CONFERENCE ON ADVANCED COMMUNICATION TECHNOLOGY, vol. 8TH, 20 February 2006 (2006-02-20), pages 1765-1770, XP002467424 abstract Sections 1-3 figures 3,6,7 -/-	1-14

X Further documenls are listed In the continuation of Box C. D See patent family annex.

▪ Special categories of cited documents

"A" document defining the general slate of the art which is nol considered to be ol particular relevance
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[1]L' document which may lhrow doubls on priority claim(s\ or which is cited lo establish the publication dale of another citation or other special reason (as specified)
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'&' documenl member of the same patent family

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European Patent Office, P.B 5818 Patenllaan 2 NL - 22ðOHV Rl(swl|k Tel. (+31-70) 340-2040, Tx, 31 651 epo nl, Fax: (+31-70) 340-3016	Dhibi , Youssef

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C(Contlnuat ıon). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate of the relevant passages	Relevant Io claim No
X	CABRIC DAiMIJELA ; TKACHENKO ARTEM ; BRODERSEN ROBERT W : "Spectrum sensing measurements of pilot, energy, and collaborative detection" IEEE MILITARY COMMUNICATIONS CONFERENCE MILCOM 2006, 23 October 2006 (2006-10-23), - 25 October 2006 (2006-10-25) pages 1-7, XP002493503 Washington, D .C , United States abstract Sections I-III figures 1,4 -----	1-14
X	CABRIC D ET AL: "Implementation issues in spectrum sensing for cognitive radios" CONFERENCE RECORD OF THE THIRTY- EIGHTH ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS AND COMPUTERS, 2004, PACIFIC GROVE, CA, USA, vol. 1 , 7 November 2004 (2004-11-07), - 10 November 2004 (2004-11-10) pages 772-776, XP010781056 PISCATAWAY, NJ, USA ISBN: 978-0-7803-8622-8 abstract Sections I-IV figures 4,5 -----	1-14