(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 976 209 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
21.03.2012 Bulletin 2012/12

(43) Date of publication A2:
01.10.2008 Bulletin 2008/40

(21) Application number: **08102861.5**

(22) Date of filing: **21.03.2008**

(51) Int Cl.:
H04L 25/03 *(2006.01)* *H04L 25/02* *(2006.01)*

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

(30) Priority: **26.03.2007 US 690966**

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(54) Reducing computational complexity in maximum likelihood MIMO OFDM decoders

(57) A factorization operation is applied on the channel Matrix H. The decomposition creates two matrixes: an upper triangular with only real-numbers on the diagonal and a unitary matrix. The decomposition simplifies the representation of the distance calculation needed for constellation points search. An exhaustive search for all the points in the constellation for two spatial streams t (1), t(2) is performed, searching all possible transmit points of (t2), wherein each point generates a SISO slicing problem in terms of transmit points of (t1); then, x,y components of t(1) are decomposed, thus turning a two-dimensional problem into two one-dimensional problems. Finally the remaining points of t(1) are searched, using Gray coding in the constellation points arrangement and the symmetry deriving from it to further reduce the number of constellation points that have to be searched.

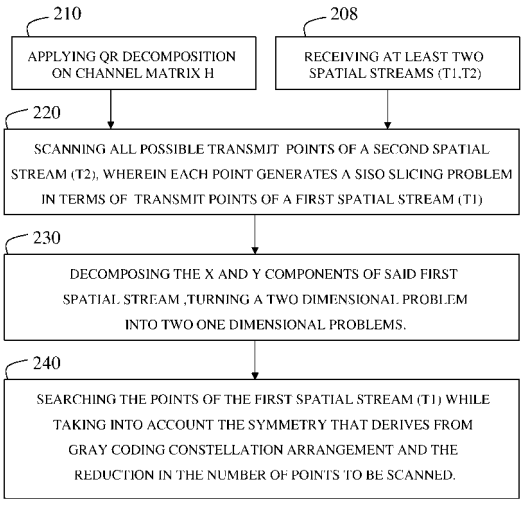

FIG. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 08 10 2861

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Y	* page 1, line 15 - page 2, line 2 * * page 3, line 18 - line 21 * * page 7, line 9 - page 9, last line * * page 11, line 3 - line 11 * * page 13, line 22 - page 15, line 14 * * page 18, line 7 - line 19 *	1-8, 16-18	ADD. H04L25/02
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	10 February 2012	Moreno, Marta

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

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10-02-2012

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