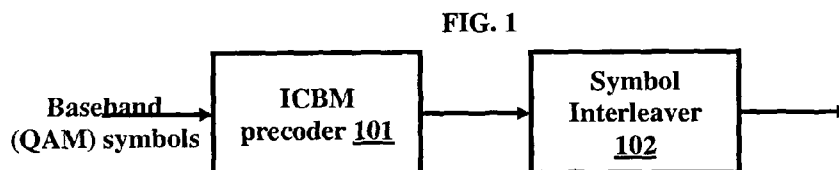




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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, 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, RO, RS, RU, 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.
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(54) Title: INTERFERENCE CANCELLING BLOCK MODULATION



(57) Abstract: Embodiments herein disclose an Interference Cancelling Block Modulation (ICBM), a new open-loop precoding scheme where each transmitter is assigned with a predetermined precoder which facilitates interference cancellation at the receivers. Only a finite set of precoders will be used, and they will be assigned to each transmitter in a pre-determined manner. Usually, interfering transmitters located adjacent to each other will have different precoders, and the same precoder can be reused by non-adjacent transmitters. The precoders are represented by $N \times K$ matrices and they expand the symbols in time and/or frequency by a factor of N/K while providing precoded sequences with low cross-correlation properties.



INTERNATIONAL SEARCH REPORT

International application No.

PCT/IN 11/00250

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - H04B 1/00 (2011.01) USPC - 455/63.1 According to International Patent Classification (IPC) or to both national classification and IPC</p>														
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) USPC: 455/63.1</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC: 375/316, 346; 455/63.1, 278.1 (keyword limited - see terms below)</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) PubWEST (PGPB, USPT, USOC, EPAB, JPAB); GOOGLE; Google Scholar Search Terms: transmit, receive, communication, wireless, coding, precoding, detecting, input stream, matrix, vector, static, dynamic, eigen</p>														
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Category*</th> <th style="width:70%;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="width:20%;">Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td align="center">Y</td> <td>US 2008/0240274 A1 (Han et al.) 02 October 2008 (02.10.2008), entire document, especially; abstract, para. [0012]-[0015], [0046]-[0048], [0059]-[0061]</td> <td align="center">1 - 19</td> </tr> <tr> <td align="center">Y</td> <td>US 2006/0036760 A1 (Oeda) 16 February 2006 (16.02.2006), entire document, especially; abstract, para. [0011]-[0013], [0046]-[0048]</td> <td align="center">1 - 19</td> </tr> <tr> <td align="center">A</td> <td>US 2003/0086515 A1 (Trans et al.) 08 May 2003 (08.05.2003), entire document</td> <td align="center">1 - 19</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	US 2008/0240274 A1 (Han et al.) 02 October 2008 (02.10.2008), entire document, especially; abstract, para. [0012]-[0015], [0046]-[0048], [0059]-[0061]	1 - 19	Y	US 2006/0036760 A1 (Oeda) 16 February 2006 (16.02.2006), entire document, especially; abstract, para. [0011]-[0013], [0046]-[0048]	1 - 19	A	US 2003/0086515 A1 (Trans et al.) 08 May 2003 (08.05.2003), entire document	1 - 19
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<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/></p>														
<table style="width:100%;"> <tr> <td style="width:50%; vertical-align: top;"> <p>* Special categories of cited documents:</p> <p>“A” document defining the general state of the art which is not considered to be of particular relevance</p> <p>“E” earlier application or patent but published on or after the international filing date</p> <p>“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>“O” document referring to an oral disclosure, use, exhibition or other means</p> <p>“P” document published prior to the international filing date but later than the priority date claimed</p> </td> <td style="width:50%; vertical-align: top;"> <p>“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>“&” document member of the same patent family</p> </td> </tr> </table>			<p>* Special categories of cited documents:</p> <p>“A” document defining the general state of the art which is not considered to be of particular relevance</p> <p>“E” earlier application or patent but published on or after the international filing date</p> <p>“L” document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>“O” document referring to an oral disclosure, use, exhibition or other means</p> <p>“P” document published prior to the international filing date but later than the priority date claimed</p>	<p>“T” later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>“Y” document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>“&” document member of the same patent family</p>										
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<p>Date of the actual completion of the international search</p> <p>03 November 2011 (03.11.2011)</p>		<p>Date of mailing of the international search report</p> <p align="center">23 NOV 2011</p>												
<p>Name and mailing address of the ISA/US</p> <p>Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201</p>		<p>Authorized officer:</p> <p align="center">Lee W. Young</p> <p>PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</p>												