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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SYSTEM AND METHOD OF OPERATION FOR NETWORK OVERLAY GEOLOCATION SYSTEM WITH Repeaters USING AM GOLAY HADAMARD SIGNATURES

(57) Abstract: A system and method for a network overlay geolocation system operating in a host wireless communication system with repeaters. enable a wireless communication system to determine if signals being received by system receivers arrive directly from a target mobile (701) or if the signals are passing through or via a repeater (702). The system's repeaters use a co-channel AM Golay Hadamard sequence multiplied by an uplink signal to watermark the repeated signal. The system uses the known AM Golay Hadamard sequences of the repeaters and the uplink signal to detect whether a repeater has operated on the signal and which repeater operated on the uplink signal. Management data can be used to provide more accurate geolocation of mobiles served by the repeater stations.
**INTERNATIONAL SEARCH REPORT**

### A. CLASSIFICATION OF SUBJECT MATTER

**IPC(7)**: H04B 7/14  
**US CL**: 455/7

According to International Patent Classification (IPC) or to both national classification and IPC.

### B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

- U.S.: 455/7,9,15,16,20,21,22,23

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practically, search terms used)

Please See Continuation Sheet

### C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>A</td>
<td>US 5,023,930 A (LESLIE) 11 June 1991 (11.06.1991) see abstract, column 5, lines 40-60</td>
<td>1-44</td>
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☐ Further documents are listed in the continuation of Box C. 
☐ See patent family annex.

* Special categories of cited documents:
  - "A" - document defining the general state of the art which is not considered to be of particular relevance  
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  - "P" - document published prior to the international filing date but later than the priority data claimed

Date of the actual completion of the international search 02 October 2005 (02.10.2005)

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Form PCT/ISA/210 (second sheet) (April 2005)
Continuation of B. FIELDS SEARCHED Item 3:
East, Derwent
search terms: repeater, Hadamard, AM Golay Hadamard, signature, tag, tagged