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(54) Title: SYSTEM AND METHODS OF RADIO INTERFERENCE BASED LOCALIZATION IN SENSOR NETWORKS

(57) Abstract: A method for radio interference based sensor localization. In one embodiment, the method has the steps of creating an interference signal from a first transmitter and a second transmitter, measuring phase offsets of the interference signal received by a first receiver and a second receiver, respectively, and determining the locations of the first and second transmitters and the first and second receivers from the measured phase offsets.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 06/13424

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8): H04H 1/00 (2007.01)
USPC: 455/39

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)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 455/3.01, 43, 500, 502, 703; 340/286.02; 307/254, 324, 400

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 Scholar; IEEE Xplore

Search terms: transmitter, pair, receiver, interference, phase, distance, localization, frequency tuning, genetic algorithm, population, error, 3-dimension, calibrating, wireless or radio, broadcast, arrival timestamp.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2,851,682 A (HAWKINS et al.) 09 September 1958 (09.09.1958), entire document.	1-7, 10-16, 18, 22, 34-40
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Y		8-9, 17, 19-21, 23-33
Y	US 2003/0187615 A1 (EPLER et al.) 02 October 2003 (02.10.2003), [0068]-[0073].	8, 19-20
Y	US 2005/0057368 A1 (CORBETT et al.) 17 March 2005 (17.03.2005), [0003]-[0004], [0028]-[0032], and [0041]-[0043].	9, 21, 23-33
Y	US 2003/0206559 A1 (TRACHEWSKY et al.) 06 November 2003 (06.11.2003), [0394]-[0408].	17

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