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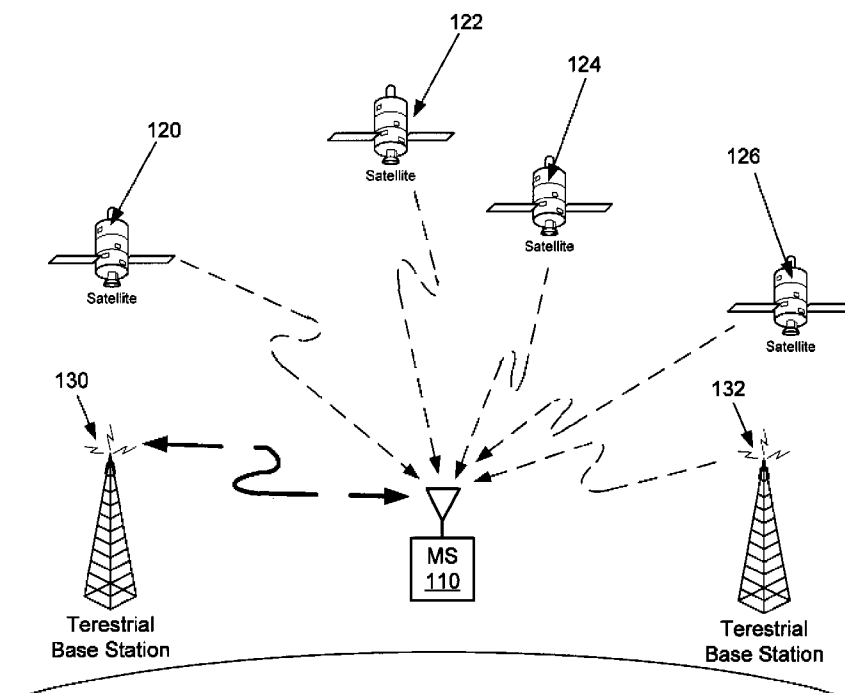
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[Continued on next page]

(54) Title: A METHOD AND SYSTEM OF A MOBILE SUBSCRIBER ESTIMATING POSITION



(57) Abstract: A method and apparatus of a mobile subscriber (MS) estimating position are disclosed. One method includes the MS receiving at least one satellite transmitted signal with a first receiver, and estimating a time of arrival of the at least one satellite transmitted signal. The MS additionally receives at least one terrestrial base station signal with a second receiver, and estimates a time of arrival of the at least one terrestrial base station signal. The MS estimates its position based on the estimated time of arrival of the at least one satellite transmitted signal and the estimated time of arrival of the at least one terrestrial base station signal.



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**(88) Date of publication of the international search report:**

7 January 2010

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US09/39530

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC: <b>G01S 1/00( 2006.01)</b>  USPC: <b>342/357.06</b> According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 342/357.06  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 practicable, search terms used)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6,249,253 B1 (Nielsen et al) 19 June 2001 (19.06.2001), see entire document.	1-24
X	US 2006/0240839 A1 (CHEN et al) 26 October 2006 (26.10.2006), see entire document.	1-24
X	US 2008/0094277 A1 (RICK) 24 April 2008 (24.04.2008), see entire document.	1-24
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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	"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
"E"	earlier application or patent published on or after the international filing date	"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
"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)	"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
"O"	document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed	
Date of the actual completion of the international search 26 May 2009 (26.05.2009)		Date of mailing of the international search report <b>08 JUN 2009</b>
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer Ken Wieder Telephone No. 571-272-2600

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US09/39530

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 16,17 and 20  
because they relate to subject matter not required to be searched by this Authority, namely:  
Please See Continuation Sheet
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of any additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

- Remark on Protest**
- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US09/39530

Box II Observations where certain claims were found unsearchable 1. because they relate to subject matter not required to be searched by this Authority, namely:

Per Enge et al., Improving GPS Coverage and Continuity: Indoors and Downtown, Stanford University cited in PTO-1449 filed April 3, 2008 is missing the date (with at least the year).

Claims 16-17, and 20 are objected to because of the following informalities:

As to claims 16 and 17, line 5, "based on" is written twice. Appropriate correction is required. As to claim 20, line 1, "The method of claim 21" is improper dependent claim.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless - (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21 (2) of such treaty in the English language.