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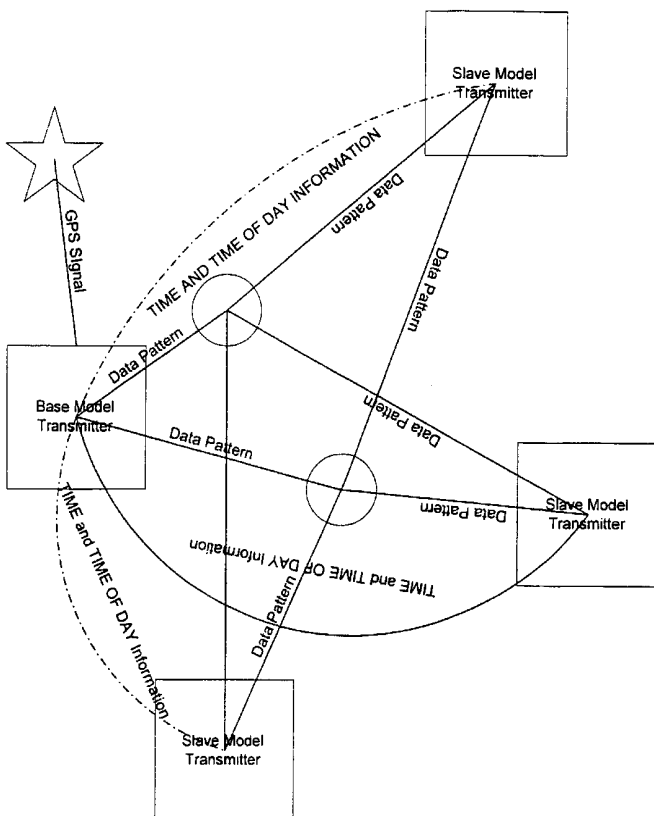
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Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: A LAND BASED METHOD AND APPARATUS FOR PROVIDING PRECISE TIME AND POSITION (TERRESTRIAL ALTERNATIVE OF THE GLOBAL POSITIONING SYSTEM - GPS)



(57) Abstract: A system and method for providing precise TIME and TIME OF DAY information from the GPS network to mobile receiving units in an efficient and cost effective manner which includes the capability of including reliable real-time position data in cell phones that will meet the FCC requirement of electronic location of 911 calls from cell phones (E9-1-1). The invention operates over a dedicated radio frequency band using two radio channels. Base and Slave Models are used which time share the common radio spectrum. Transmitters are programmed to transmit only in their assigned time slot so as to prevent radio signal interference in any given geographic area.



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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.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/US 01/05214

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G01S5/14 G01S5/10

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)
IPC 7 G01S H04Q

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 practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	WO 99 48233 A (KSI INC) 23 September 1999 (1999-09-23) abstract; figure 1 page 3, line 8 - line 19 page 11, line 17 - line 26 page 12, line 8 - line 16 page 13, line 19 -page 14, line 8 page 23, line 20 -page 24, line 12 ---	1,2,5-8, 12,15 3,4
X	US 5 600 706 A (FEUERSTEIN MARTIN J ET AL) 4 February 1997 (1997-02-04) abstract; claims 20,21; figures 2-4 column 6, line 18 - line 38 column 8, line 7 -column 9, line 21 column 9, line 46 - line 59 column 10, line 22 -column 11, line 11 column 12, line 1 -column 13, line 45 --- -/--	5-7,12, 15

Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"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)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"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

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"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.

"&" document member of the same patent family

Date of the actual completion of the international search 20 November 2001	Date of mailing of the international search report 19 February 2002 (19.02.02)
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040. Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Niemeijer, R
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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/05214

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 98 52376 A (NOKIA TELECOMMUNICATIONS OY ;RANTALAINEN TIMO (FI); SILVENTOINEN M) 19 November 1998 (1998-11-19) abstract; figures 1,2 page 4, line 16 - line 29 page 7, line 6 - line 22 page 10, line 6 - line 17 ---	3,4
A	WO 97 23785 A (DRANE CHRISTOPHER R ;MACNAUGHTAN MALCOLM D (AU); SCOTT CRAIG A (AU) 3 July 1997 (1997-07-03) abstract; figure 1 page 10, line 11 -page 11, line 10 ---	1,5,7,15
A	US 5 900 838 A (BOCCUZZI JOSEPH ET AL) 4 May 1999 (1999-05-04) abstract; figures 1,3 column 2, line 34 -column 5, line 41 -----	1,5,7,15

INTERNATIONAL SEARCH REPORT

In ternational application No.
PCT/US 01/05214

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

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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

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

see additional sheet

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 an additional fee, this Authority did not invite payment of any additional fee.
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.:
1-8, 12, 15

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-8,12,15

Position determination

2. Claims: 9-11,13,14,16

Provision of time

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/05214

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