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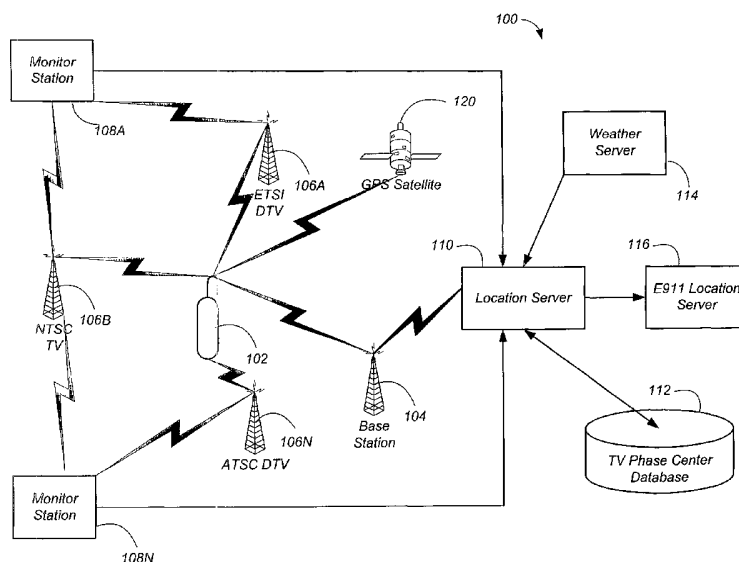
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 - (71) Applicant (for all designated States except US): **ROSUM CORPORATION** [US/US]; 1450 Veterans Blvd, Suite 100, Redwood City, CA 94063 (US).
 - (72) Inventors; and
 - (75) Inventors/Applicants (for US only): **RABINOWITZ, Matthew** [US/US]; 130 Golden Hills Road, Portola Valley, CA 94208 (US). **SPILKER, James, J. Jr.** [US/US]; 85 Roan Place., Woodside, CA 94062 (US).
 - (74) Agent: **DUNNING, Richard, A., Jr.**; Law Office of Richard A. Dunning, Jr., 343 Soquel Avenue, Suite 311, Santa Cruz, CA 95062 (US).
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(54) Title: POSITION LOCATION USING GPS AUGMENTED BY TV



(57) Abstract: A method, apparatus, and computer-readable media for determining the position of a user terminal comprises receiving at the user terminal (102) a broadcast television signal from a television signal transmitter; determining a first pseudo-range between the user terminal and the television signal transmitter based on a known component of the broadcast television signal; receiving at the user terminal a global positioning signal from a global positioning satellite; determining a second pseudo-range between the user terminal and the global positioning satellite based on the global positioning signal; and determining a position of the user terminal based on the first and second pseudo-ranges, a location of the television signal transmitter, and a location of the global positioning satellite.



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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.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G01S 3/02; H04B 7/185

US CL : 342/457, 464, 357.06

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. : 342/450, 457, 458, 464, 465, 357.01, 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)
GPS, TV, SPS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,510,801 A (ENGELBRECHT et al) 23 April 1996 (23.04.96)	1-134
A	US 5,774,829 A (CISNEROS et al) 30 June 1998 (30.06.98)	1-134
A	US 5,952,958 A (SPEASL et al) 14 September 1999 (14.09.99)	1-134

Further documents are listed in the continuation of Box C.

See patent family annex.

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"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
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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. (703)305-3230

Authorized officer

Dao L. Phan
Dao L. Phan

Telephone No. (703) 306-4167