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Jin et al.

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(54) **METHOD AND SYSTEM FOR REAL-TIME NAVIGATION USING MOBILE TELEPHONES**

5,528,248 A 6/1996 Steiner et al. 342/357
5,579,535 A 11/1996 Orlen et al. 455/33.1
5,610,821 A 3/1997 Gazis et al. 364/444.2

(List continued on next page.)

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FOREIGN PATENT DOCUMENTS

DE 196 21 424 A1 12/1997
WO 99/27742 6/1999

OTHER PUBLICATIONS

Supplementary European Search Report, dated Nov. 14, 2002, for Application Number Ep 00967228.
International Search Report, dated Dec. 19, 2002, for International Application No. PCT/US02/02323, filed Jan. 24, 2002.
International Search Report, dated Mar. 26, 2001, for International Application No. PCT/US00/35075, filed Dec. 21, 2000.
International Search Report, dated Jan. 4, 2001, for International Application No. PCT/US00/27083, filed Sep. 27, 2000.
International Search Report, dated Jan. 12, 2001, for International Application No. PCT/US00/26921, filed Sep. 27, 2000.

Primary Examiner—Tan Nguyen

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Related U.S. Application Data

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(60) Provisional application No. 60/156,225, filed on Sep. 27, 1999, and provisional application No. 60/211,994, filed on Jun. 16, 2000.

(51) **Int. Cl.**⁷ **G01C 21/26**

(52) **U.S. Cl.** **701/207; 701/210; 340/995**

(58) **Field of Search** 701/201, 202, 701/205, 207, 209, 208, 210; 455/456; 340/990, 995

(56) **References Cited**

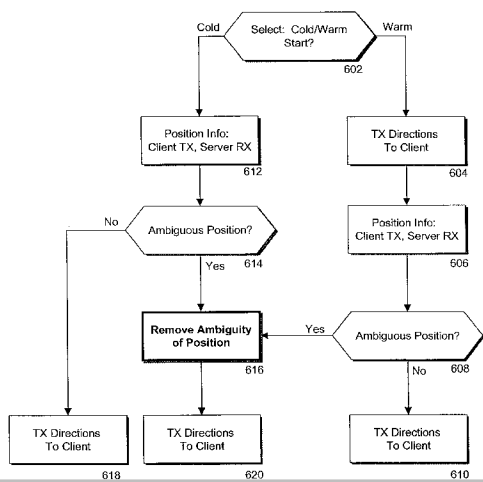
U.S. PATENT DOCUMENTS

5,278,424 A * 1/1994 Kagawa 250/559.37

(57) **ABSTRACT**

In an Interactive Real-Time Distributed Navigation system a method and system is disclosed for implementing a warm start/cold start option. Through selection of the warm start option, an interactive session for providing navigational directions to a user is more quickly established because a user's position is assumed not to be ambiguous. A method of the invention verifies this assumption. Through selection of the cold start option, the method of the invention seeks to remove ambiguity in a user's position before providing navigational directions. If, however, a user's position is not ambiguous, the method of the invention reverts to a warm start condition to immediately transmit navigational directions to the user.

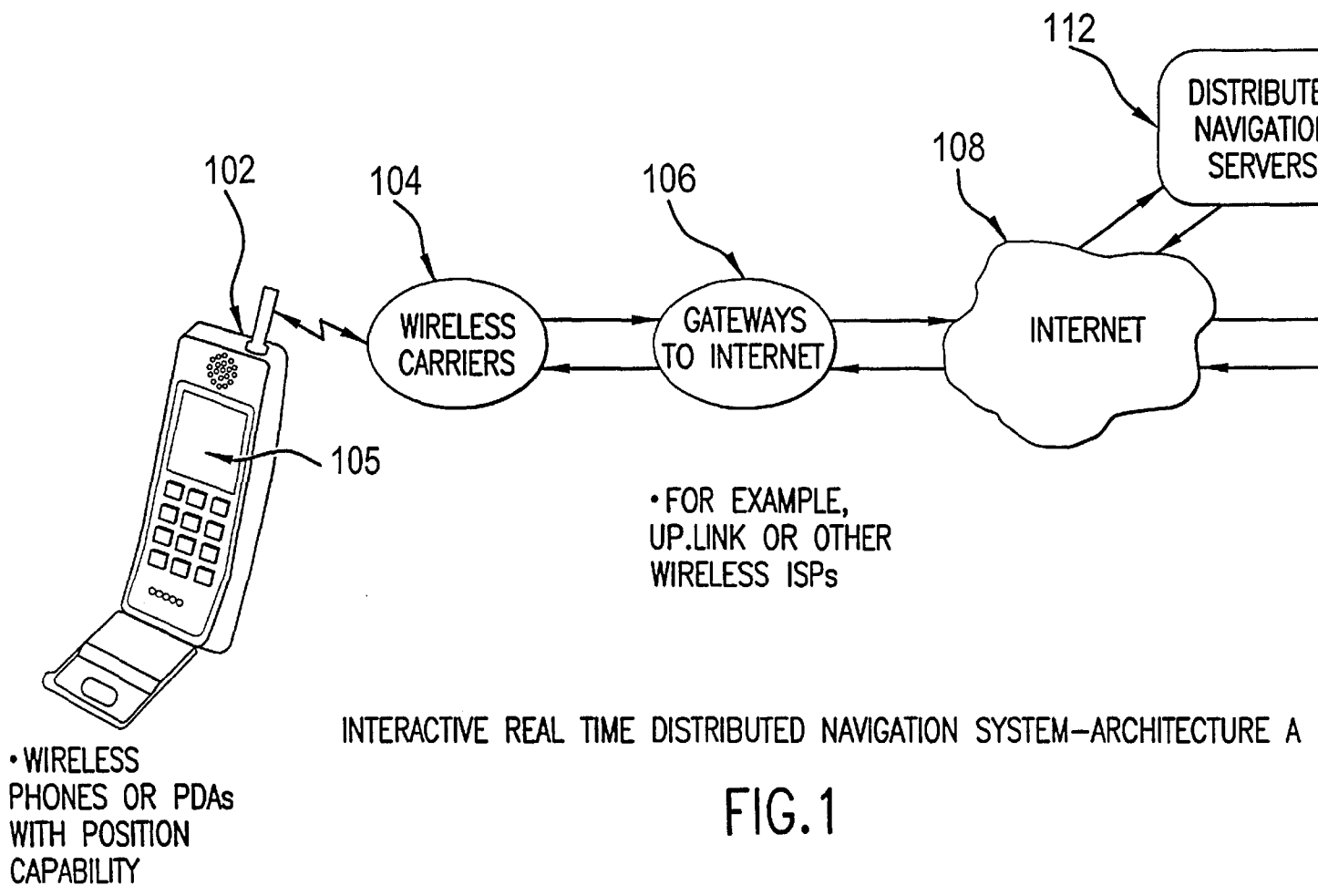
32 Claims, 7 Drawing Sheets

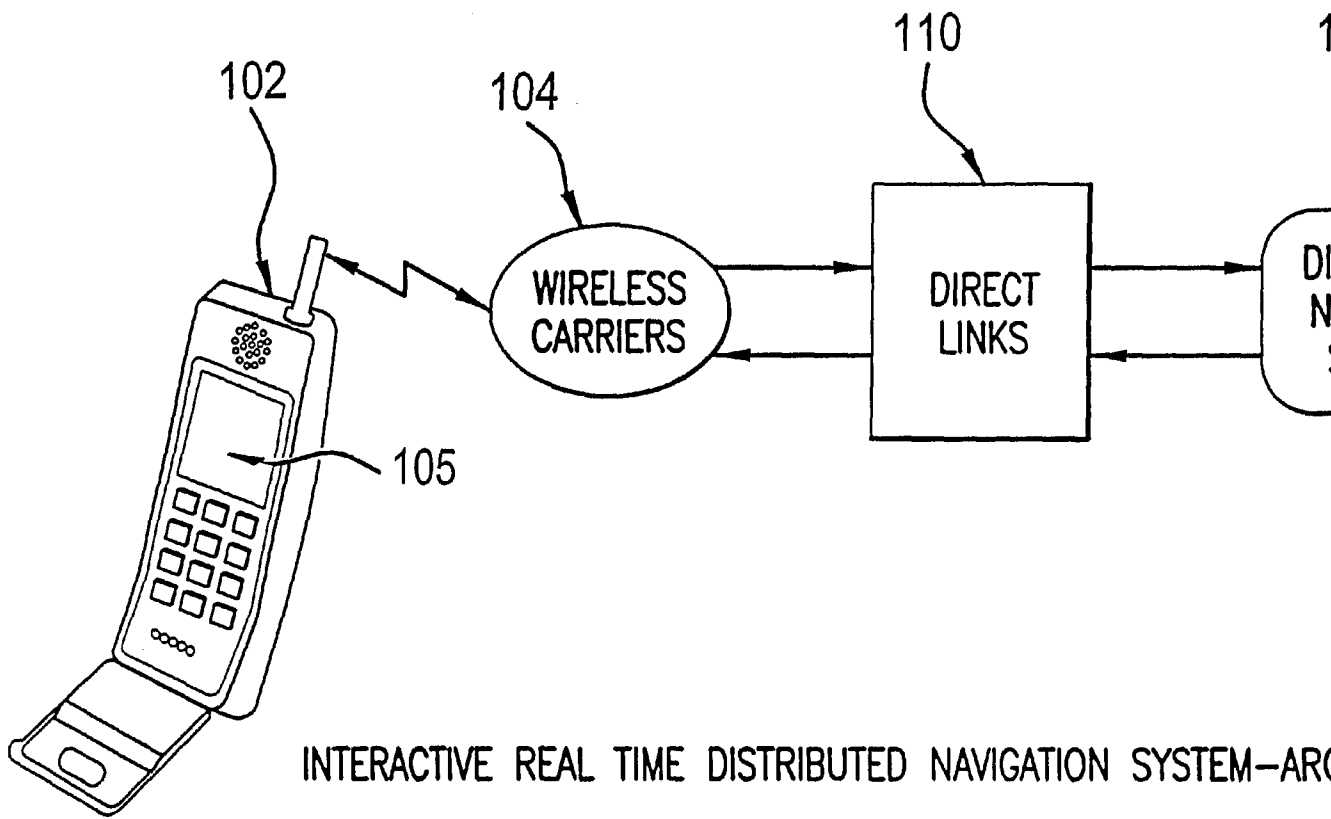


U.S. PATENT DOCUMENTS

5,742,131 A	4/1998	Sprout et al.	455/456	6,029,069 A	2/2000	Takaki	455/456	
5,742,509 A	4/1998	Goldberg et al.	364/449.5	6,032,098 A	*	2/2000	Takahashi et al.	701/210
5,774,828 A	6/1998	Brunts et al.	701/210	6,055,478 A	4/2000	Heron	701/213	
5,774,829 A	6/1998	Cisneros et al.	701/213	6,070,123 A	5/2000	Beyer et al.	701/209	
5,838,562 A	11/1998	Gudat et al.	364/424.02	6,107,944 A	8/2000	Behr et al.	340/995	
5,884,218 A	3/1999	Nimura et al.	701/208	6,112,099 A	8/2000	Ketola	455/466	
5,902,350 A	5/1999	Tamai et al.	701/211	6,115,700 A	9/2000	Ferkinhoff et al.	706/13	
5,904,728 A	5/1999	Tamai et al.	701/211	6,148,261 A	11/2000	Obradovich et al.	701/208	
5,910,177 A	6/1999	Zuber	701/202	6,154,658 A	11/2000	Caci	455/466	
5,912,635 A	6/1999	Oshizawa et al.	340/988	6,175,806 B1	1/2001	Thuente	701/213	
5,922,042 A	7/1999	Sekine et al.	701/210	6,175,807 B1	1/2001	Buchler et al.	701/220	
5,928,295 A	7/1999	Geier	701/29	6,199,045 B1	3/2001	Giniger et al.	705/1	
5,928,307 A	7/1999	Oshizawa et al.	701/210	6,205,400 B1	3/2001	Lin	701/214	
5,933,100 A	8/1999	Golding	340/995	6,208,295 B1	3/2001	Dogan et al.	342/378	
5,938,720 A	8/1999	Tamai	701/209	6,243,657 B1	6/2001	Tuck et al.	702/150	
5,938,721 A	8/1999	Dussell et al.	701/211	6,266,615 B1	7/2001	Jin	701/213	
5,987,381 A	11/1999	Oshizawa	701/209	6,269,306 B1	7/2001	Ibrahim et al.	701/214	
6,014,090 A	1/2000	Rosen et al.	340/905	6,401,035 B2	6/2002	Jin	701/213	
6,021,371 A	2/2000	Fultz	701/200	6,405,123 B1	6/2002	Rennard et al.	701/200	

* cited by examiner





• WIRELESS
PHONES OR PDAs
WITH POSITION
CAPABILITY

FIG.2

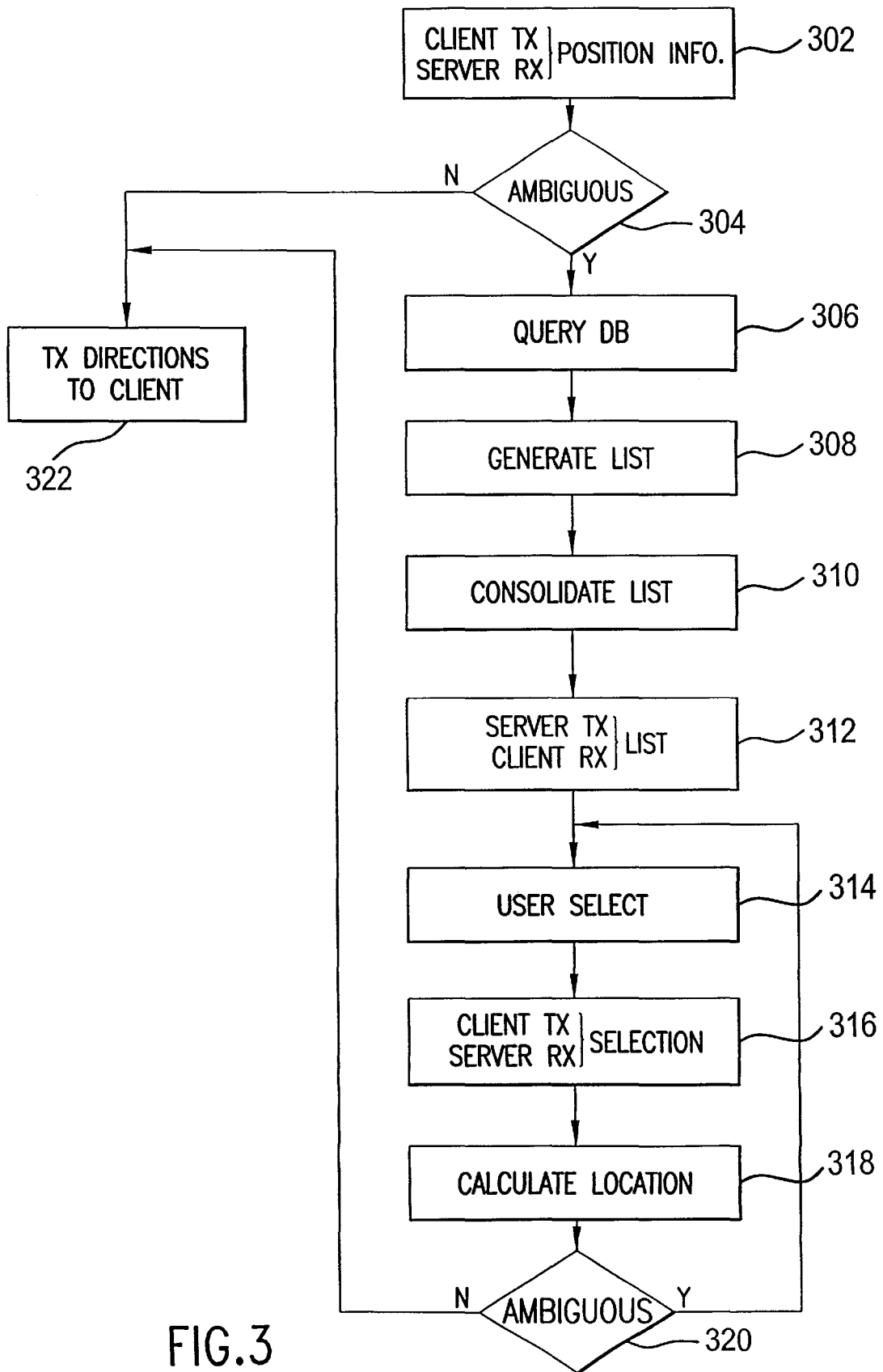


FIG.3

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