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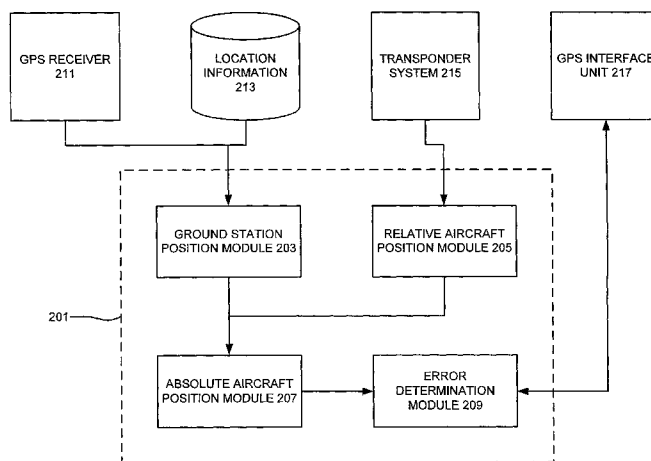
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(54) **Title:** TRANSPONDER LANDING SYSTEM AUGMENTATION OF THE GLOBAL POSITIONING SYSTEM



(57) **Abstract:** A GPS navigation system augmentation using a transponder landing system. Initially, the position of a reference ground station is determined. When an aircraft using an on-board GPS navigation system approaches the ground station, the ground station accurately determines the position of the aircraft using the aircraft's transponder replies. In addition, the ground station receives a current position for the aircraft measured by an on-board GPS navigation system. By comparing the position of the aircraft determined from the transponder replies with the GPS-calculated position provided by the aircraft, the ground station determine error information for the on-board GPS navigation system. The ground station then transmits the error information back to the aircraft. Using this error information, the on-board GPS navigation system can improve the accuracy of future position calculations for the aircraft.

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## INTERNATIONAL SEARCH REPORT

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According to International Patent Classification (IPG) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
GOIS

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)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	EP 1 010 988 A2 (HUGHES ELECTRONICS CORP [US]) 21 June 2000 (2000-06-21)	1-5, 7-10, 12-14
Y	figures 2-5 paragraph [0007] paragraph [0011] - paragraph [0013] paragraph [0019] - paragraph [0020] paragraph [0022] - paragraph [0036]	6,11
Y	US 5 017 930 A (STOLTZ JOHN R [US] ET AL) 21 May 1991 (1991-05-21) figures 1,2 column 2, line 28 - line 51 column 3, line 27 - column 4, line 2	6,11
A	US 5 786 773 A (MURPHY TIMOTHY ALLEN [US]) 28 July 1998 (1998-07-28) the whole document	1-14
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 Further documents are listed in the continuation of Box C See patent family annex

\* Special categories of cited documents

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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A	EP 0 498 655 B1 (ROCKWELL INTERNATIONAL CORP [US]) 28 August 1996 (1996-08-28) figure 2 column 5, line 14 - line 21 column 7, line 11 - line 42 -----	1-14

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Information on patent family members

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