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Applicant: Hitachi, Ltd.
Tokyo 100-8280 (JP)
- (72)

Inventors:
 • Imamoto, Kenji
 Chiyoda-ku, Tokyo 100-8220 (JP)
 • Maekawa, Keiji
 Chiyoda-ku, Tokyo 100-8220 (JP)
 • Sugita, Yoichi
 Chiyoda-ku, Tokyo 100-8220 (JP)

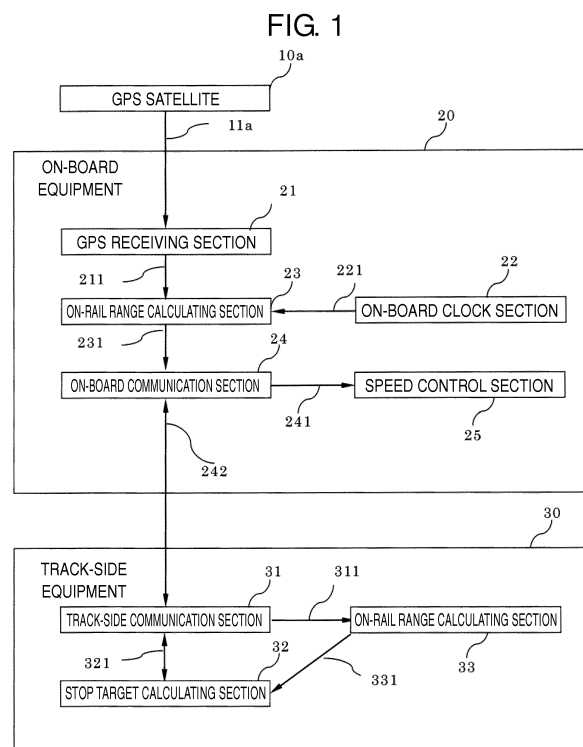
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Representative: Gill, Stephen Charles
Mewburn Ellis LLP
City Tower
40 Basinghall Street
London EC2V 5DE (GB)

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Train control system

(57) In a train control system, in position estimating methods by a tacho-generator, an acceleration sensor, and the like, since estimation accuracy always changes because of a train state, a surrounding environment, and the like, it is difficult to assume an appropriate error and set the error as the safety margin distance, an excess safety margin distance is set, and service density is deteriorated. On-board equipment 20 of a train 2 includes an on-board clock 22 that specifies track information and transmission time information from a GPS satellite 1a and reception time of the information, an on-rail range calculating section 23 that calculates an on-rail range according to the received information and the reception time, an on-board communication section 24 that performs transmission of own train on-rail range information to track-side equipment 30 and reception of stop target information from the track-side equipment 30, and a speed control section 25 that controls traveling speed of the own train on the basis of the stop target information. The track-side equipment 30 includes a stop target calculating section 32 that calculates stop targets according to on-rail range information of respective trains. The track-side equipment 30 transmits the stop target information to the trains to attain an optimum service with high safety and service density and energy saving.





PARTIAL EUROPEAN SEARCH REPORT

Application Number

under Rule 62a and/or 63 of the European Patent Convention.
This report shall be considered, for the purposes of
subsequent proceedings, as the European search report

EP 12 17 7162

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2005/107954 A1 (NAHLA IBRAHIM [AU]) 19 May 2005 (2005-05-19) * paragraph [0030] - paragraph [0031] * * paragraph [0046] - paragraph [0068] * * paragraph [0163] - paragraph [0175] * * figure 1 *	1,3-5,8, 10-15	INV. B61L25/02 B61L27/00
X	----- MAYHEW G L ET AL: "Application, of radio navigation technology to advanced automatic train control", POSITION LOCATION AND NAVIGATION SYMPOSIUM, 1994., IEEE LAS VEGAS, NV, USA 11-15 APRIL 1994, NEW YORK, NY, USA, IEEE, NEW YORK, NY, USA, 11 April 1994 (1994-04-11), pages 217-224, XP010117735, DOI: 10.1109/PLANS.1994.303317 ISBN: 978-0-7803-1435-1 * page 218, left-hand column, line 1 - page 219, right-hand column, paragraph 1 * * page 222, left-hand column, line 1 - right-hand column, last line * ----- -/-	1,5,8, 11-13	TECHNICAL FIELDS SEARCHED (IPC) B61L

INCOMPLETE SEARCH

The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.

Claims searched completely :

Claims searched incompletely :

Claims not searched :

Reason for the limitation of the search:

see sheet C

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Place of search	Date of completion of the search	Examiner
Munich	3 June 2016	Janhsen, Axel
CATEGORY OF CITED DOCUMENTS		
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document		

EPO FORM 1503 03.82 (P04E07)

Application Number

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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (IPC)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	US 2005/065726 A1 (MEYER THOMAS J [US] ET AL) 24 March 2005 (2005-03-24) * paragraph [0008] - paragraph [0014] * * paragraph [0041] * * paragraph [0114] - paragraph [0123] * -----	1,3-5,8,10-15	TECHNICAL FIELDS SEARCHED (IPC)

**INCOMPLETE SEARCH
SHEET C**

Application Number

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Claim(s) completely searchable:

1, 3-5, 8, 10-15

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Claim(s) not searched:

2, 6, 7, 9

Reason for the limitation of the search:

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The search has been restricted to the subject-matter indicated by the applicant in his letter of 30.03.2016 filed in reply to the invitation pursuant to Rule 62a(1) EPC.

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

03-06-2016

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