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(71) Applicant: Siemens Mobility Limited
London, NW1 1AD (GB)

(72) Inventor: Marshall, Archie
Chippenham, SN15 1GG (GB)

(74) Representative: Deffner, Rolf
Siemens Aktiengesellschaft
Postfach 22 16 34
80506 München (DE)
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(54)

REAL-TIME COMPUTER VISION-BASED TRACK MONITORING

(57) A rail-vehicle mounted system arranged to receive data concerning a state of a track ahead of the vehicle, and to analyse the data in real time to indicate conditions of the track ahead of the vehicle, the system

comprising a sensor unit mounted on the rail vehicle and directed at a track ahead of the rail vehicle in the direction of motion.

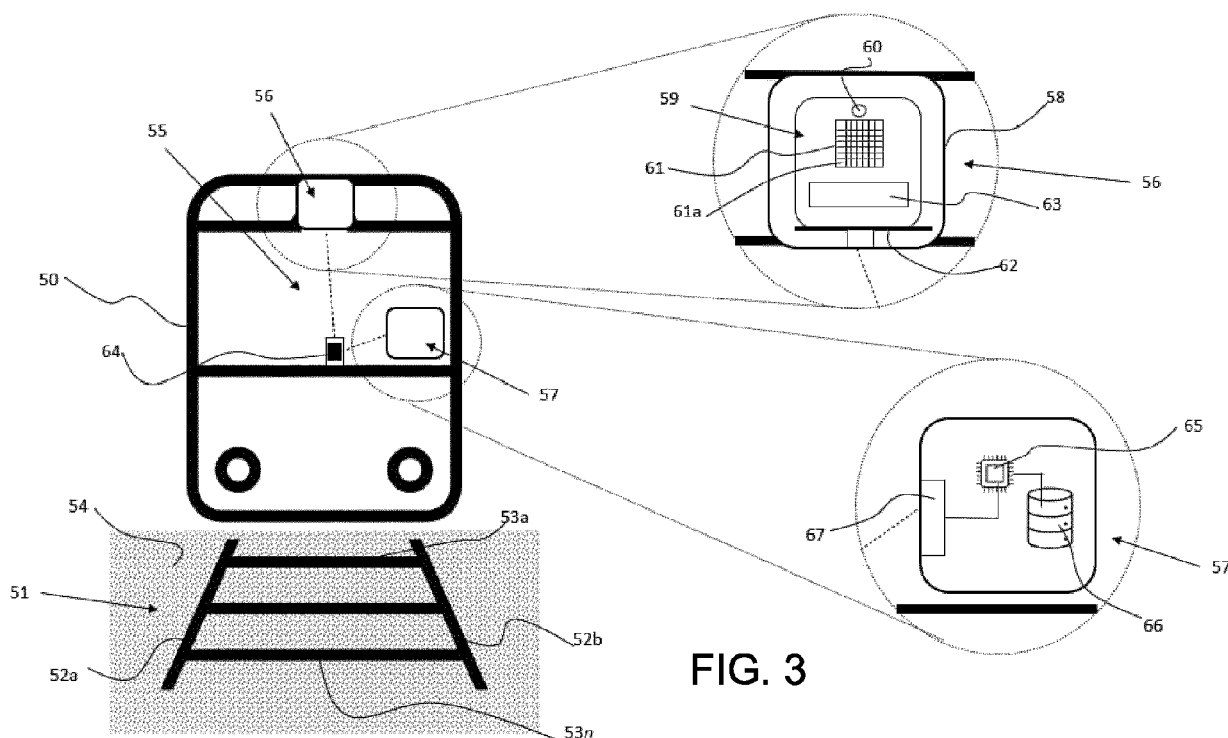


FIG. 3



EUROPEAN SEARCH REPORT

Application Number

EP 22 16 2767

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EPO FORM 1503 03.82 (P04C01)

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, P	US 2021/279488 A1 (DOLBERG SAGI [IL] ET AL) 9 September 2021 (2021-09-09) * abstract * * paragraph [0052] - paragraph [0059] * * paragraph [0072] * * paragraph [0153] * * figures 1,3,7a * -----	1-5, 10	INV. B61L23/04
X	DE 10 2015 219690 A1 (SIEMENS AG [DE]) 13 April 2017 (2017-04-13)	1-4, 9, 11, 12	
Y	* abstract * * paragraph [0009] - paragraph [0012] * * paragraph [0023] - paragraph [0025] * * paragraph [0042] - paragraph [0043] * * figures 1,2 * -----	6-8	
Y	US 2020/172134 A1 (KERNWEIN JEFFREY D [US] ET AL) 4 June 2020 (2020-06-04) * abstract * * paragraph [0131] * * paragraph [0075] * -----	6-8	TECHNICAL FIELDS SEARCHED (IPC) B61L
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 13 December 2022	Examiner Janssen, 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			



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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-5, 9-12

Detection of driving direction

2. claims: 6-8

Detection of point position

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

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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
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