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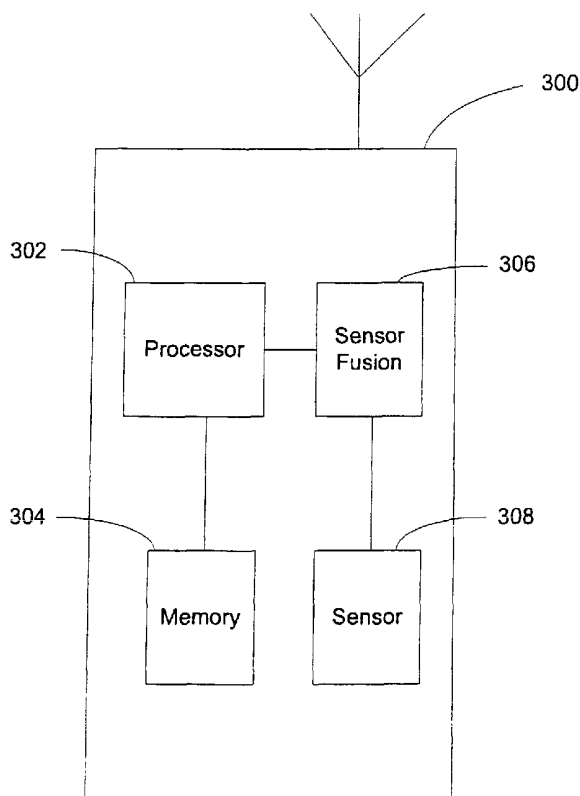
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[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR IMPROVING VEHICLE OPERATOR PERFORMANCE



(57) Abstract: A method (700) for improving driver performance includes the steps of receiving vehicle operating data from the vehicle (702); monitoring an interior portion of the vehicle and receiving operator activity data from the interior portion of the vehicle (704); receiving vehicle environment data from the environment external to the vehicle (706); monitoring the vehicle operator and receiving operator condition data relating to a condition of the vehicle operator (708); recording an operator performance assessment based on the vehicle operating data, the operator activity data, the vehicle environment data and the operator condition data (710); and reporting the operator performance assessment to the operator (712).



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A. CLASSIFICATION OF SUBJECT MATTER
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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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)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 92 03803 A (SSES AB) 5 March 1992 (1992-03-05) page 5, line 20 -page 6, line 2 ----	1, 15
Y	WO 00 07150 A (UNIV TWENTE) 10 February 2000 (2000-02-10) page 2, line 30 -page 3, line 20 ----	1, 15
A	EP 0 825 568 A (DATA TEC CO LTD) 25 February 1998 (1998-02-25) figure 5 ----	1-15
A	WO 00 34742 A (DAIMON TOSHIO ;DATA TEC CO LTD (JP); TANO MICHIIYASU (JP); TOKIO MA) 15 June 2000 (2000-06-15) figure 1 ----- -/-	1-15

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 00 31712 A (ERIKSSON HANS ;KAUFMANN PETER (SE); ANDERSSON GREGER (SE)) 2 June 2000 (2000-06-02) -----	

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 01/32104

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9203803	A	05-03-1992	EP 0560770 A1 JP 6500414 T WO 9203803 A1	22-09-1993 13-01-1994 05-03-1992
WO 0007150	A	10-02-2000	NL 1009775 C2 EP 1101202 A1 WO 0007150 A1	01-02-2000 23-05-2001 10-02-2000
EP 0825568	A	25-02-1998	JP 3272960 B2 JP 10063905 A CN 1174144 A EP 0825568 A2 KR 226365 B1 US 6067488 A	08-04-2002 06-03-1998 25-02-1998 25-02-1998 15-10-1999 23-05-2000
WO 0034742	A	15-06-2000	JP 3044025 B2 JP 2000171267 A CN 1290340 T EP 1059508 A1 WO 0034742 A1	22-05-2000 23-06-2000 04-04-2001 13-12-2000 15-06-2000
WO 0031712	A	02-06-2000	AU 1594300 A WO 0031712 A1	13-06-2000 02-06-2000