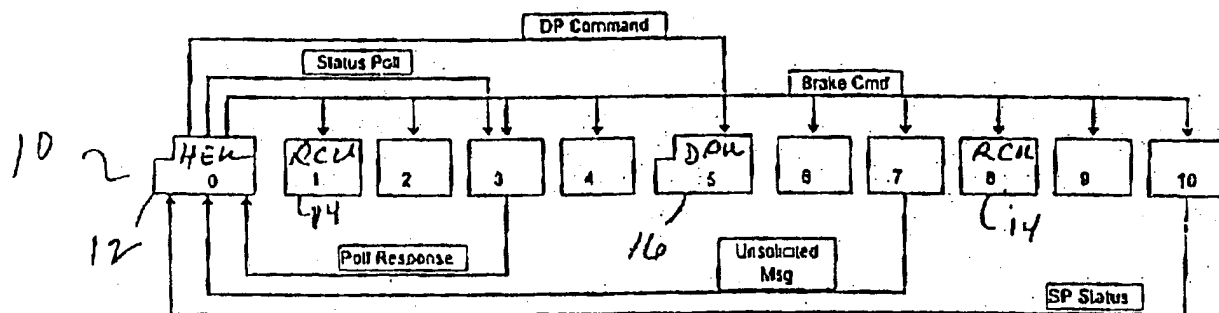




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(71) Applicant: GE-HARRIS RAILWAYS ELECTRONICS, L.L.C. [US/US]; 407 North John Rodes Boulevard, Melbourn, FL 32934-8059 (US).		(88) Date of publication of the international search report: 19 November 1998 (19.11.98)	
(72) Inventors: DARBY, Albert, Donald, Jr.; 3700 Ponderosa Road, Valkaria, FL 32950 (US). PELTZ, David; 4374 Parkway Drive, Melbourne, FL 32934 (US). HEFNER, Mark; 395 Rio Plama South, Indiatlantic, FL 32903 (US). JARMAN, George; 5613 Loblolly Place, Grant, FL 32949 (US). SCHOONMAKER, William; 201 Plantation Club Drive #1103, Melbourne, FL 32940 (US). ALI, Irfan; 1134 Phoenix Avenue, Schenectady, NY 12308 (US).			

(54) Title: A COMMUNICATIONS SYSTEM AND METHOD FOR INTERCONNECTED NETWORKS HAVING A LINEAR TOPOLOGY, ESPECIALLY RAILWAYS



(57) Abstract

A system and method for communicating over networks, particularly generally-linear networks such as a network of railcars (1-10) in a railway train (10). The disclosed system and method include the relaying of packets which may contain plural messages down a line of nodes (1-10). Acknowledgement of the packets is obtained implicitly by listening to a subsequent relay of the packet and retransmission of the packet is effected on a diverse antenna (18) in the event of non-acknowledgement. Message bandwidth is shared among the nodes (1-10) of the system by a message priority system and by the reservation of portions of a packet for certain types of messages. Message bandwidth is also shared by the use of groups of nodes (1-10) as relay participants and by periodically changing the group which is performing the relay operations.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/05057

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : Please See Extra Sheet.

US CL : Please See Extra Sheet.

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 370/312, 315, 349, 388, 389, 401; 455/9, 11.1, 13.1, 66; 371/32-34

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS: (train# or railcar# or railway# or locomotive#) and (communicat? or repeat? or relay? or transceiv?) and (antenna# or wireless or transmit?)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3,628,147 A (MAKINO) 14 DECEMBER 1969, Fig. 1, cols. 1-14.	1-19
Y	US 4,947,484 A (TWITTY et al.) 07 AUGUST 1990, Figs. 6-8, summary.	1-19
Y	US 5,420,883 A (SWENSEN et al.) 30 MAY 1995, Figs. 1-3, 5-10, 16-17, 22-26, summary, cols.4-11.	1-19
Y	US 5,428,603 A (KIVETT) 27 JUNE 1995, Figs. 1-3, 7-8, summary, cols. 2-3.	1-19
Y	US 5,592,483 A (HIEDA et al.) 07 JANUARY 1997, Figs.. 9-19, summary, cols. 7-11.	1-19



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Facsimile No. (703) 305-3230

Authorized officer

DAVID R. VINCENT

Telephone No. (703) 305-4957

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