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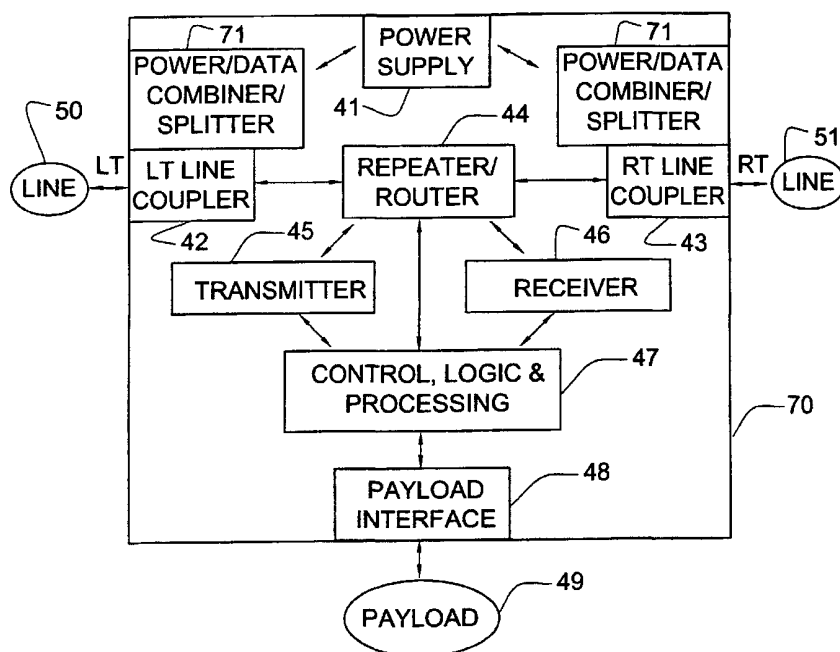
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[Continued on next page]

(54) Title: LOCAL AREA NETWORK FOR DISTRIBUTING DATA COMMUNICATION, SENSING AND CONTROL SIGNALS



(57) Abstract: A network (60) for carrying out control, sensing and data communications, comprising a plurality of nodes (62, 63, 64, 65, 66). Each node may be connected to a payload (49), which comprises sensors, actuators and DTE's. The network is formed using a plurality of independent communication links (61a, 61b, 61c, 61d), each based on electrically-conducting communication media comprising at least two conductors and interconnecting two nodes, in a point-to-point configuration. During network operation, nodes can be dynamically configured as either data-generating nodes, wherein data is generated and transmitted into the network, or as receiver/repeater/router nodes, wherein received data is repeated from a receiver port to all output ports. During normal network

operation, the network shifts from state to state. Each state is characterized by assigning a single node as the data-generating node, and configuring all other nodes in the network as repeaters and receivers. The network can be configured in linear or circular topology, or any mixture of both. The nodes and the payloads can each be powered by local power supply or via the network wiring. In the latter case, dedicated wires can be used, or the same conductors may be employed for both power distribution and communication. Network control can be performed external to the network, or by using the network itself as transport for control messages. Shifting from state to state can be done by selecting sequential nodes to be the data-generating node, or by selecting arbitrary nodes to be the data-generating node.



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International Application No

PC1/IL 00/00384

A. CLASSIFICATION OF SUBJECT MATTER

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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)

IPC 7 H04L

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, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | WO 96 37984 A (THOMSON CONSUMER ELECTRONICS ;BLATTER HAROLD (US)) 28 November 1996 (1996-11-28) page 1, line 29 -page 2, line 32 page 10, line 15 -page 11, line 9 --- | 1,2, 10-16 |
| A | US 5 124 990 A (WILLIAMSON GREGORY L) 23 June 1992 (1992-06-23) column 3, line 48 -column 6, line 68 --- | 1-3,10 |
| A | US 5 841 360 A (BINDER YEHUDA) 24 November 1998 (1998-11-24) cited in the application abstract ----- | 1,2,4,5, 10 |

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

☒ Patent family members are listed in annex.

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Information on patent family members

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