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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, or importing into the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Michelle K. Lee

Director of the United States Patent and Trademark Office



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Sulc

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(54) **SYSTEM FOR WIRELESS MESH NETWORK COMMUNICATION**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

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CPC **H04W 84/20** (2013.01); **H04L 61/35** (2013.01); **H04W 40/20** (2013.01); **H04W 40/38** (2013.01); **H04L 45/42** (2013.01); **H04L 45/48** (2013.01); **H04W 72/0446** (2013.01)

(58) **Field of Classification Search**

None

See application file for complete search history.

(56)

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Primary Examiner — Gary Mui

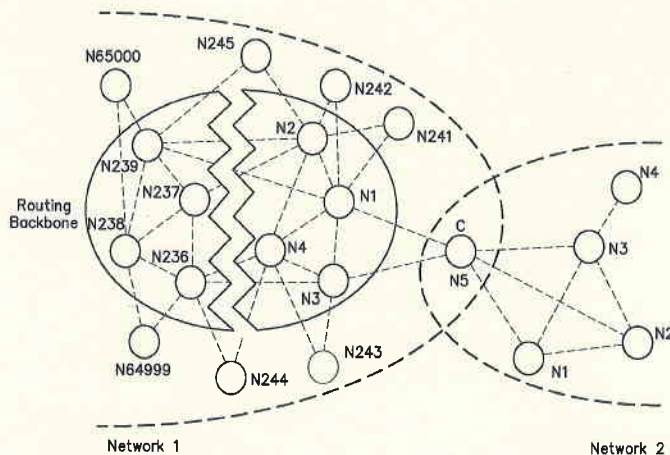
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(57)

ABSTRACT

A general wireless mesh network of communication devices with packet message transmission, especially for telemetry and automation, includes at least a single control communication device and a set of slave communication devices. The control communication device searches in the network and assigns a virtual routing number to each slave communication device. The virtual routing number reflects a distance of the slave communication device from the control communication device, expressed by the number of routings, and is stored in the slave communication device. The slave communication device, for further routing of packets in the mesh network, uses time slots assigned according to the difference between said virtual routing number and the virtual routing number of the sender of a received packet. Packet routing is based on successive flooding of the virtual routing structure and time division multiplexing.

20 Claims, 4 Drawing Sheets



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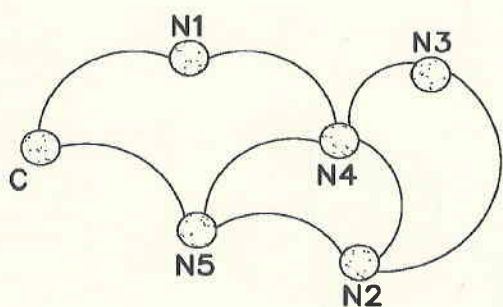


FIG. 1A

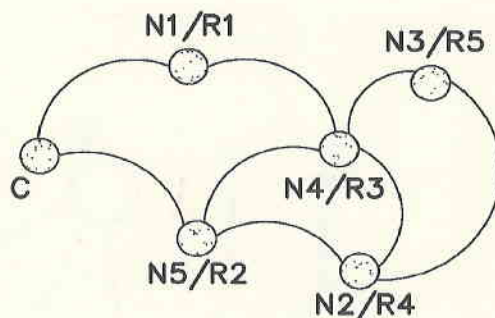


FIG. 1B

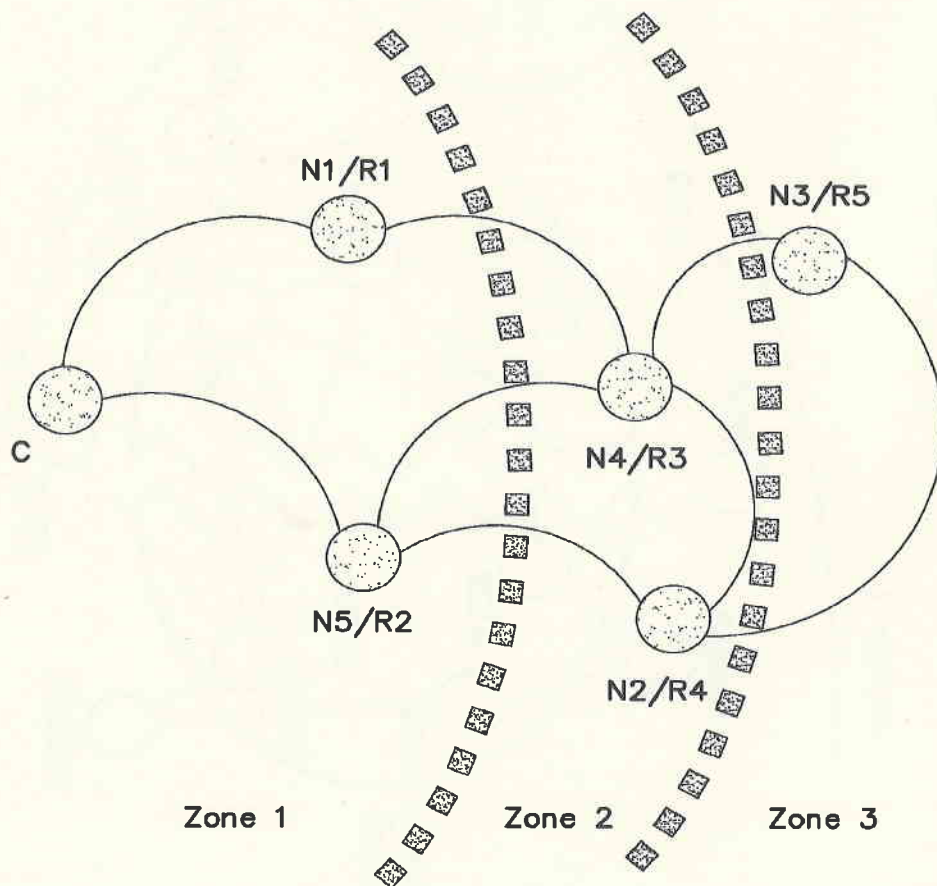


FIG. 1C

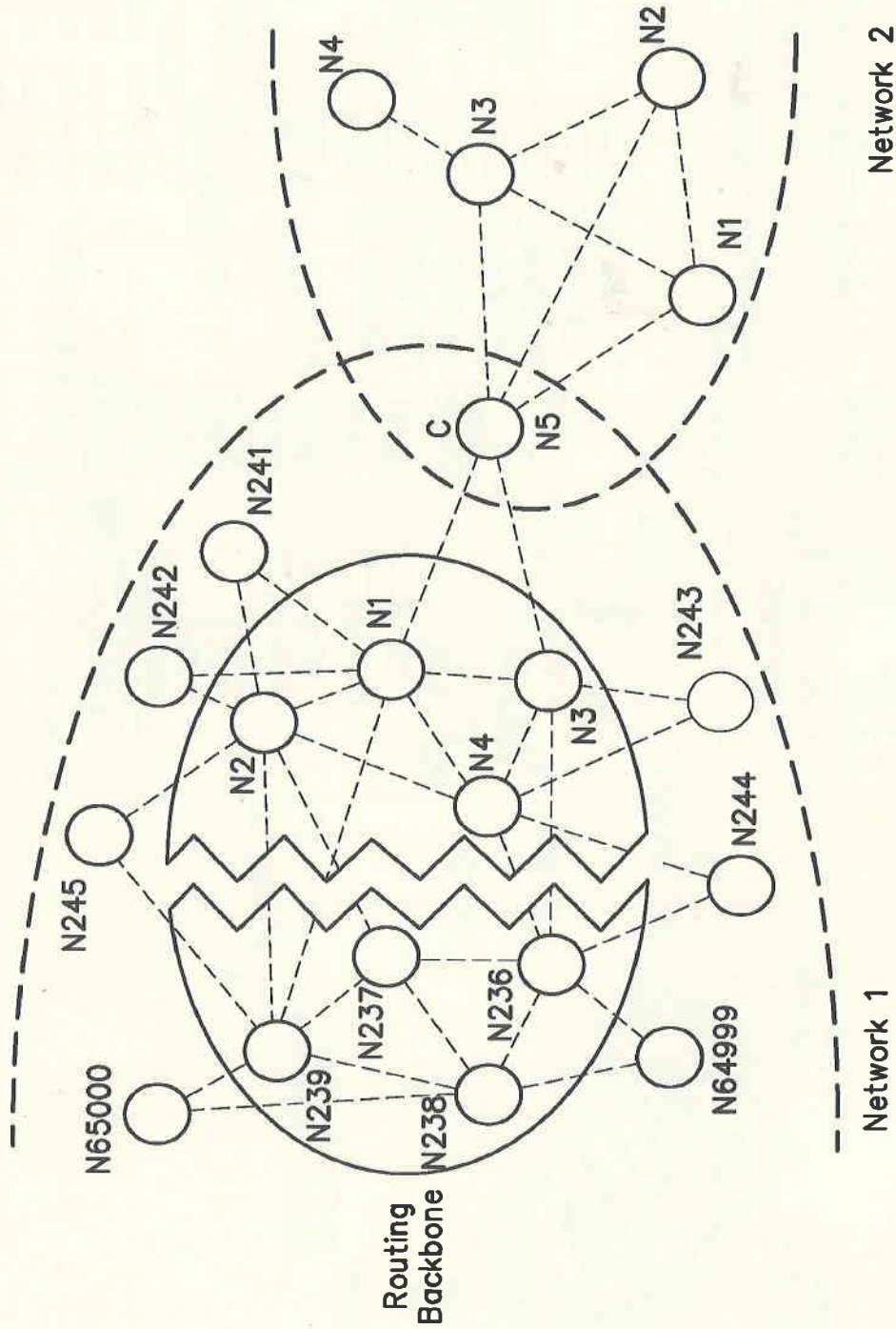


FIG. 2

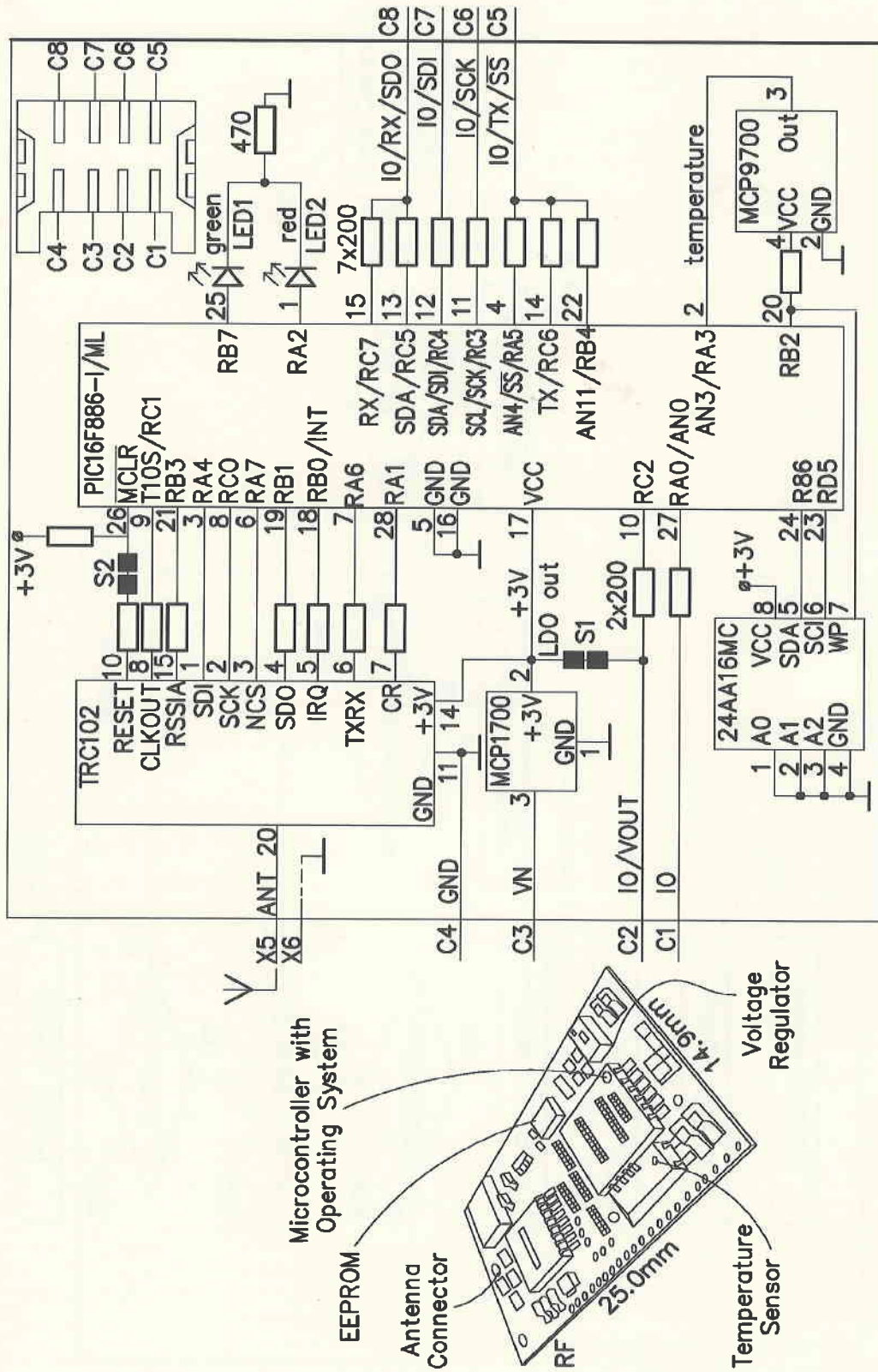
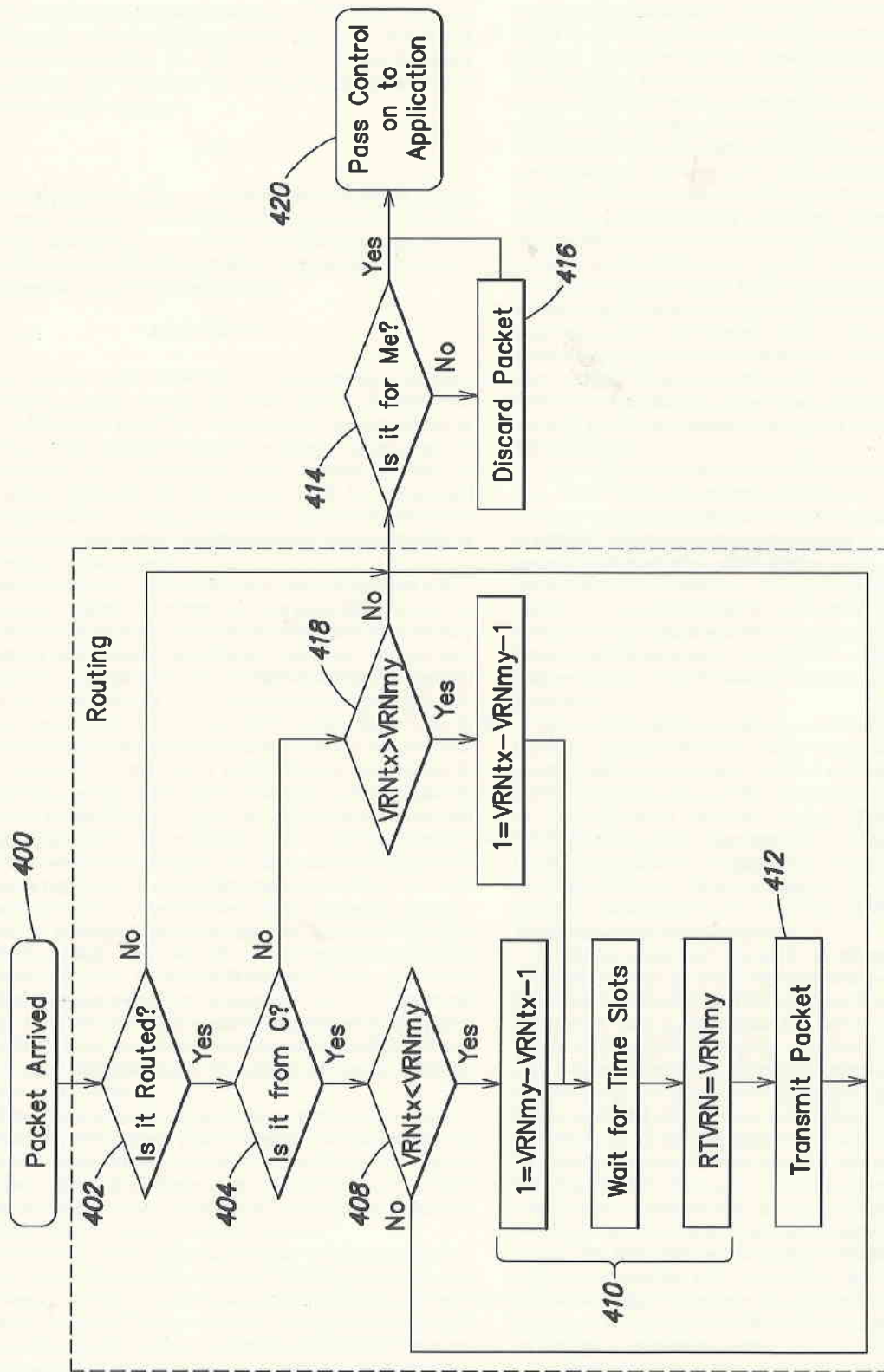


FIG. 3



Flow Chart of Routing

FIG. 4