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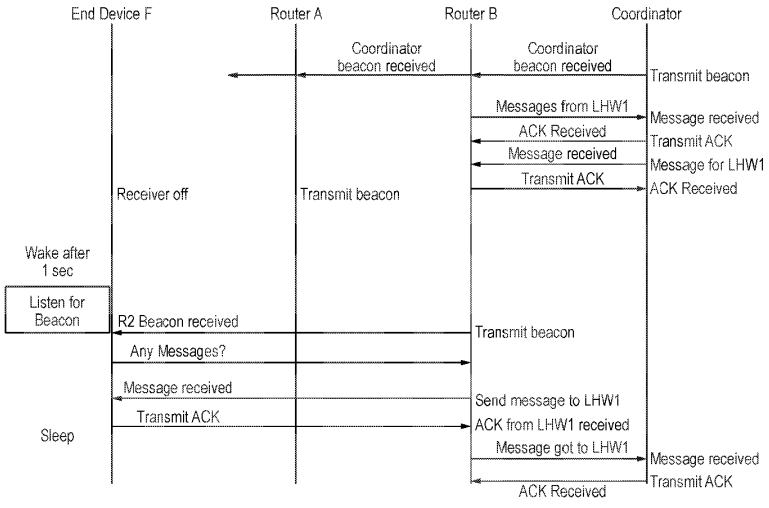
(54) Title: BEACONED WIRELESS NETWORK

Fig. 7



(57) Abstract: A wireless network comprises nodes, including routers having a tree-shaped communication topology and end devices, communicate in accordance a network protocol, wherein the routers transmit beacons in respective timeslots within a periodic beaconing interval, passively scan for messages, and, in response to receiving a message, transmit an acknowledgement thereof the received message. An end device that has a message that is pending transmission, passively scans for beacons transmitted from any router; and in response thereto, transmits the message, and passively scans for an acknowledgement, repeating those steps if no acknowledgement is received. This provides responsivity in an environment having rapidly changing propagation paths. To reduce power consumption, the end devices do not passively scan for beacons except when they have a message that is pending transmission, and also at predetermined times for reception of a downstream message. When radio silence is required, the routers do not transmit beacons.

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