US008606903B2

(12) **United States Patent**
Al-Wakeel et al.

(10) **Patent No.: US 8,606,903 B2**
(45) **Date of Patent: Dec. 10, 2013**

(54) **COOPERATIVE PACKET ROUTING FOR WIRELESS SENSOR NETWORKS**

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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 878 days.

(21) Appl. No.: **12/328,662**

(22) Filed: **Dec. 4, 2008**

(65) **Prior Publication Data**

US 2010/0142422 A1 Jun. 10, 2010

(51) **Int. Cl.**
G06F 15/173 (2006.01)
G06F 15/16 (2006.01)

(52) **U.S. Cl.**
USPC **709/224**; 709/245; 709/241; 709/242

(58) **Field of Classification Search**
USPC 709/224, 241, 242, 245
See application file for complete search history.

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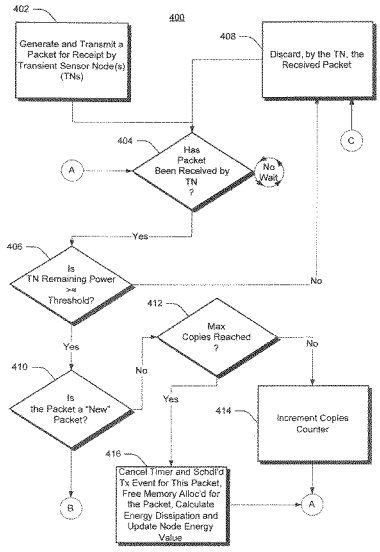
(57) **ABSTRACT**

A cooperative packet routing for wireless sensor networks is described. In one aspect, a transient sensor node in a wireless sensor network receives a packet from a source node, wherein the packet is targeted for receipt by a base station. The transient sensor node, responsive to receiving the packet, estimates how much operational energy remains in the sensor node. If the determined amount of energy meets a configurable threshold, the transient sensor node implements a set of cooperative packet routing operations for conditional re-transmission of the packet to the base station. The configurable threshold is set to ensure substantially optimal usage and lifetime of the sensor node in the wireless sensor network. The conditional re-transmission of the packet is based on a set of randomized packet re-transmission criteria.

18 Claims, 48 Drawing Sheets
(43 of 48 Drawing Sheet(s) Filed in Color)