US007436789B2

(12) **United States Patent**
Caliskan et al.

(10) **Patent No.: US 7,436,789 B2**
(45) **Date of Patent: Oct. 14, 2008**

(54) **AD HOC WIRELESS NODE AND NETWORK**

(75) Inventors: **Alaattin Caliskan**, Lawrenceville, NJ (US); **Paul Hashfield**, Princeton Junction, NJ (US); **Indur Mandhyan**, Princeton, NJ (US); **Robert J. Siracusa**, Lawrenceville, NJ (US)

(73) Assignee: **Sarnoff Corporation**, Princeton, NJ (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 839 days.

(21) Appl. No.: **10/900,156**

(22) Filed: **Jul. 27, 2004**

(65) **Prior Publication Data**

US 2005/0078672 A1 Apr. 14, 2005

Related U.S. Application Data

(60) Provisional application No. 60/510,039, filed on Oct. 9, 2003.

(51) **Int. Cl.**
H04B 7/00 (2006.01)

(52) **U.S. Cl.** **370/310.1**; 370/338; 455/41.2

(58) **Field of Classification Search** 370/310, 370/312, 346, 310.1, 338; 455/41.2
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,682,142 A 10/1997 Loosmore et al.
7,171,476 B2 * 1/2007 Maeda et al. 709/227
2001/0022780 A1 9/2001 Mizutani et al.
2002/0082035 A1 6/2002 Aihara et al.
2002/0191573 A1 12/2002 Whitehill et al.
2003/0035273 A1 2/2003 Frank et al.
2003/0054767 A1 3/2003 Mandhyan et al.
2003/0110291 A1 6/2003 Chen
2003/0157951 A1 8/2003 Hasty, Jr.
2003/0174682 A1 9/2003 Barker, Jr.
2003/0202465 A1 10/2003 Cain
2003/0202468 A1 10/2003 Cain et al.
2003/0204623 A1 10/2003 Cain
2003/0204625 A1 10/2003 Cain
2004/0028023 A1 2/2004 Mandhyan et al.

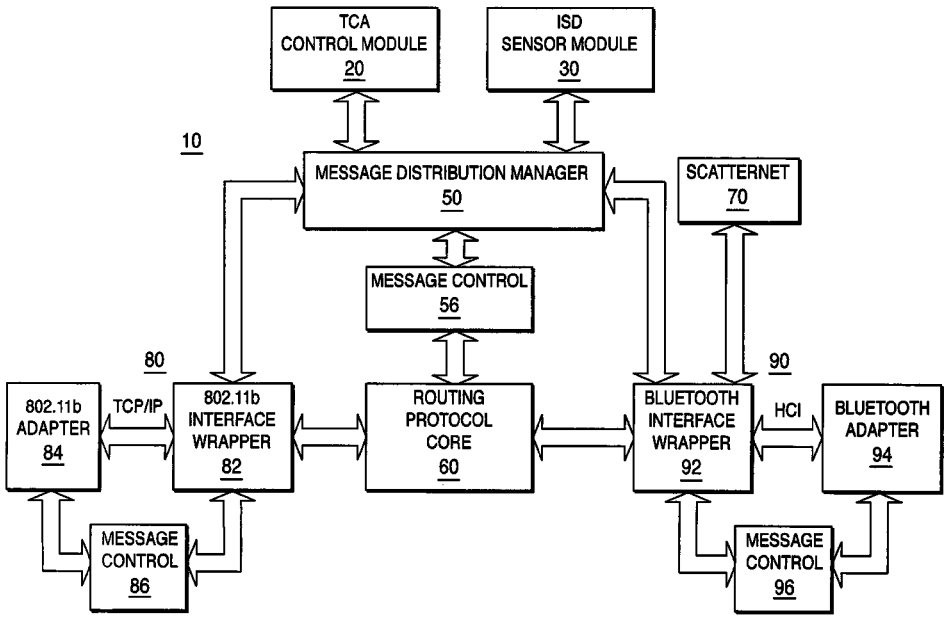
OTHER PUBLICATIONS

Declaration of Alaattin Caliskan and Paul Hashfield Regarding Experimental Use, Sep. 8, 2004 and Sep. 14, 2004.
Curt Franklin, "How Bluetooth Works," http://electronics.howstuffworks.com/bluetooth.htm/printable, 6 pages, Printed Aug. 29, 2003.

* cited by examiner

Primary Examiner—Temica M Beamer
(74) *Attorney, Agent, or Firm*—Lowenstein Sandler PC

(57) **ABSTRACT**

A node is suitable for a wireless network. A wireless network comprises one or more sensor nodes and/or one or more control nodes. In the wireless network, the sensor node transmits in response to a sensed event and/or a request from a control node. A transmission/routing of data between a sensor node and/or a control node may be subject to a policy constraint and a resource constraint.

36 Claims, 13 Drawing Sheets