

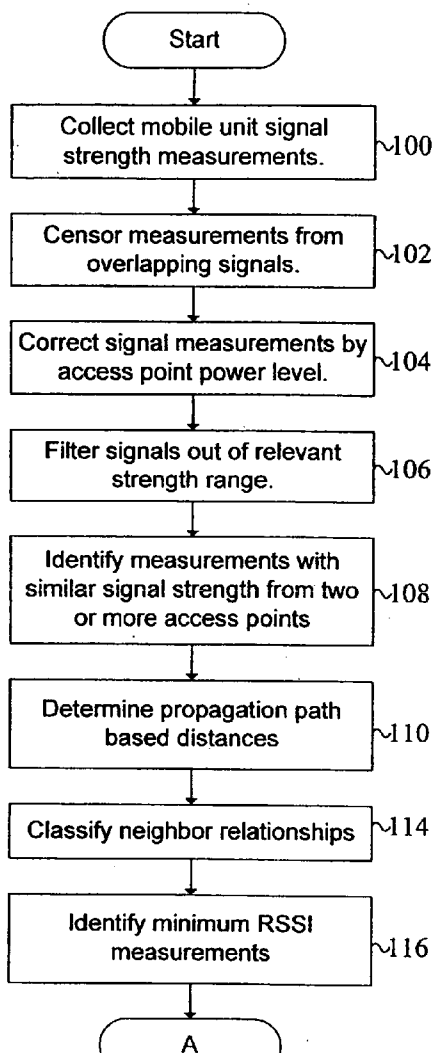


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(19) **United States**(12) **Patent Application Publication****Whelan**(10) **Pub. No.: US 2005/0003827 A1**(43) **Pub. Date: Jan. 6, 2005**(54) **CHANNEL, CODING AND POWER
MANAGEMENT FOR WIRELESS LOCAL
AREA NETWORKS****Publication Classification**(51) **Int. Cl.⁷ H04Q 7/20**(52) **U.S. Cl. 455/454**(76) **Inventor: Robert J. Whelan, Kirkland, WA (US)**(57) **ABSTRACT**

Correspondence Address:
JONES DAY
222 EAST 41ST ST
NEW YORK, NY 10017 (US)

A system and method are disclosed for the management of WLANs in cases where unmanaged access points are present as well as with the addition or removal of access points. The disclosed system and method use signal data and network traffic statistics collected by mobile units to determine optimal configuration settings for the access points. The access point settings so managed can include the operating channel or center frequency, orthogonal signal coding used (optionally including the data rate), if any, and the transmission power. The solutions computed can account for the inherent trade-offs between wireless network coverage area and mutual interference that may arise when two or more access points use the same or overlapping frequency bands or channels and the same or similar signal coding.

(21) **Appl. No.: 10/778,758**(22) **Filed: Feb. 13, 2004****Related U.S. Application Data**(60) **Provisional application No. 60/447,166, filed on Feb. 13, 2003.**

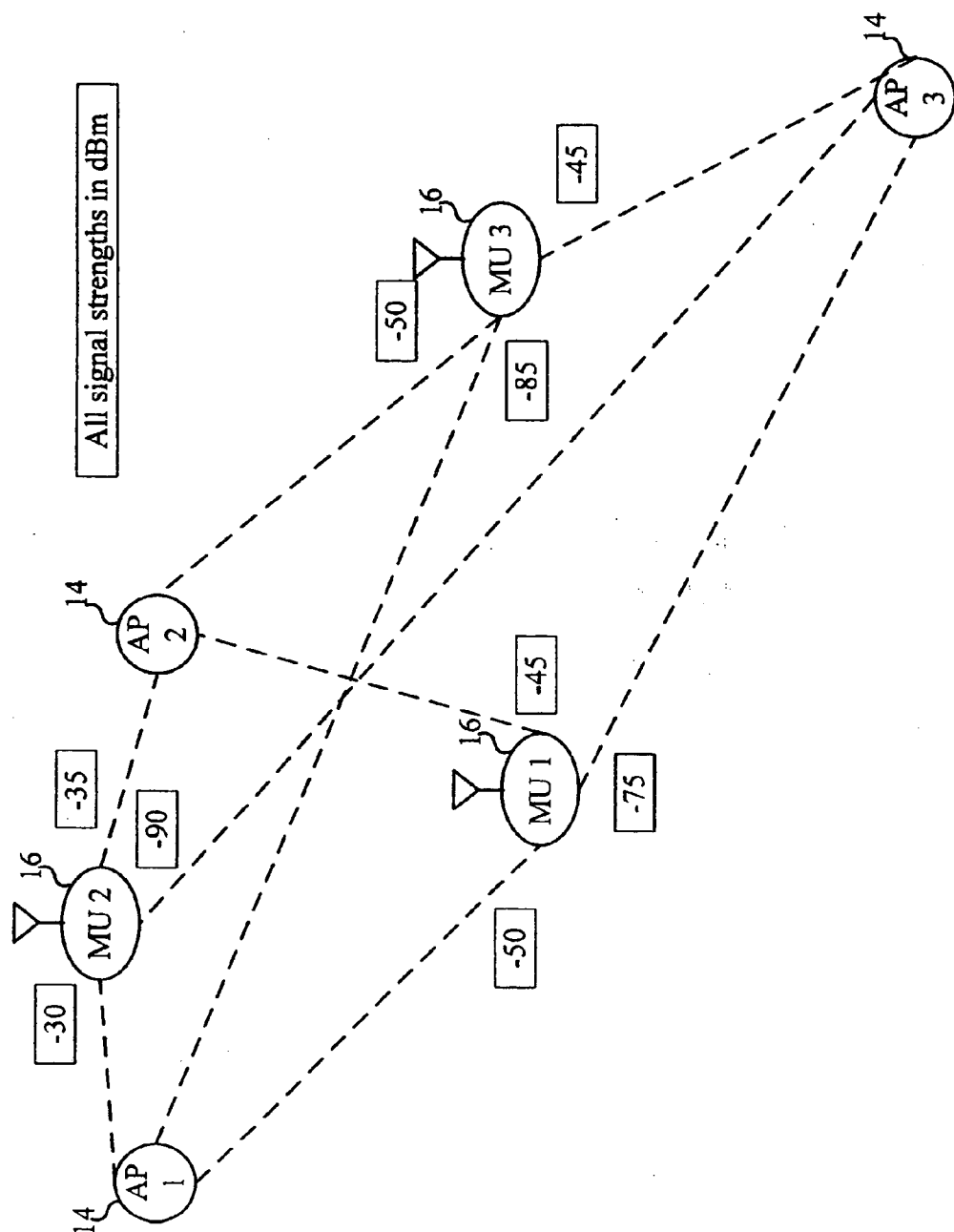


Figure 1. Mobile Unit Signal Strength Measurements

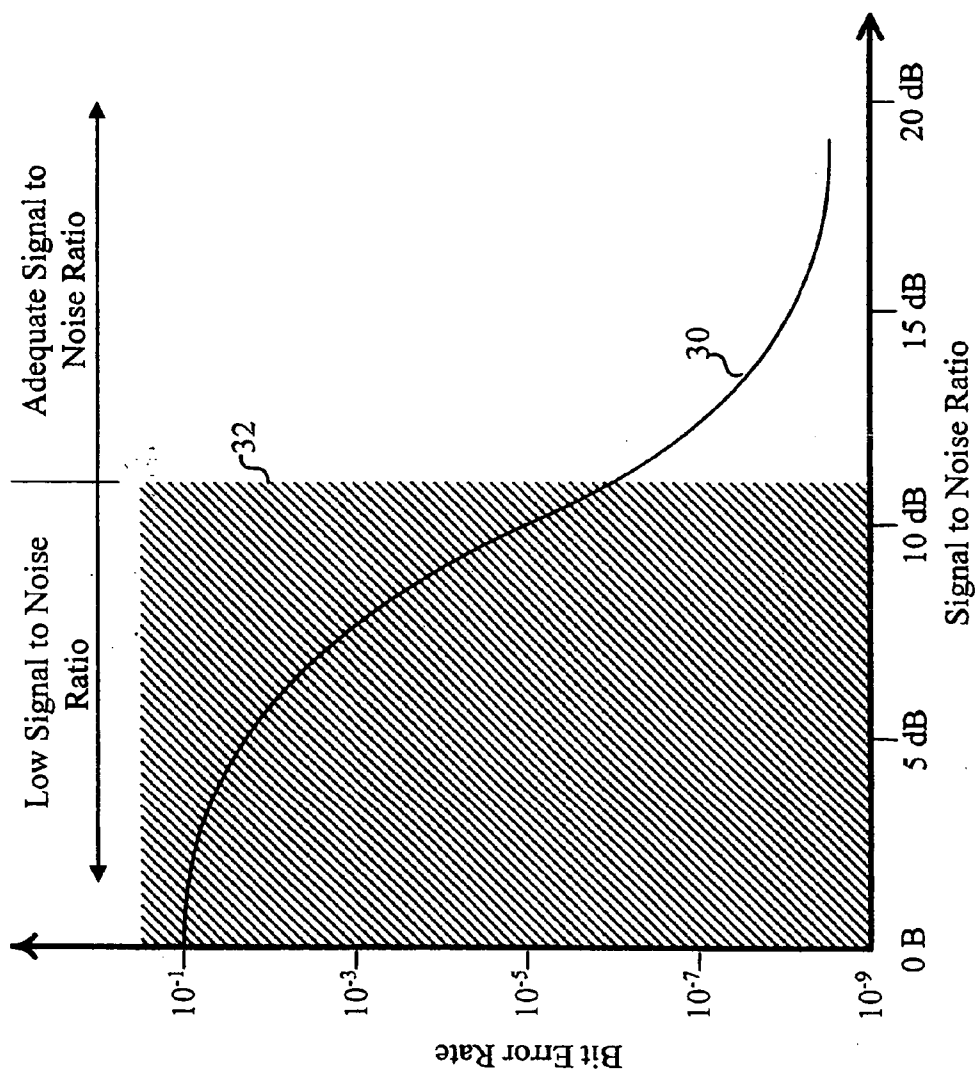


Figure 2. Hypothetical Bit Error Rate Curve for Mobile Unit Receiver

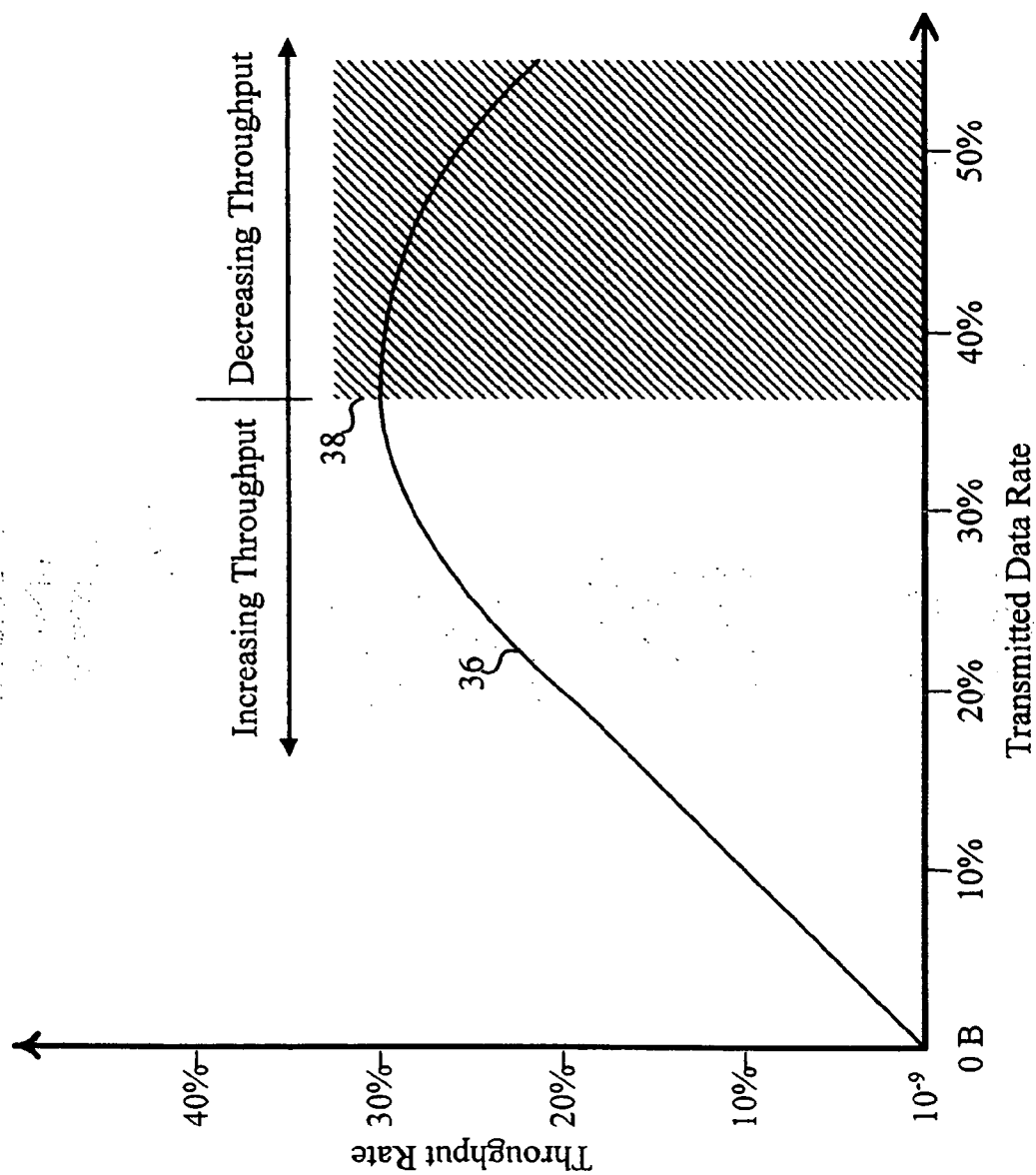


Figure 3. Example of network throughput vs. submitted data

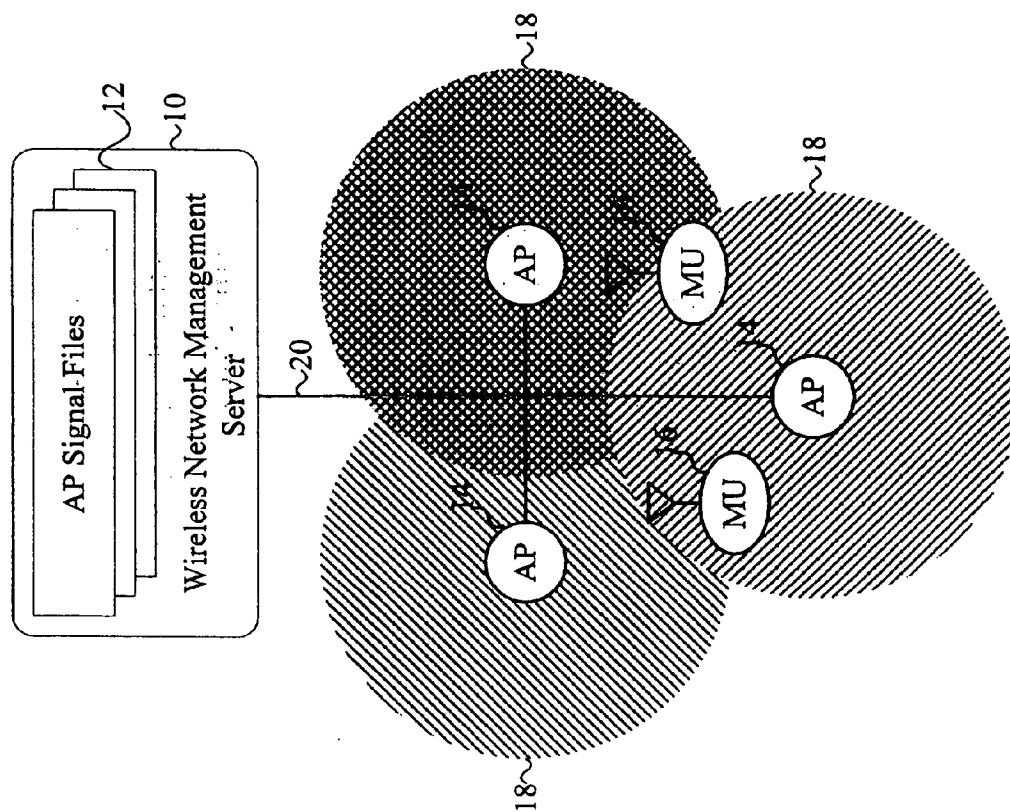


Figure 4. Overall System Block Diagram

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