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(12) **United States Patent**
Lim

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(54) **METHOD AND APPARATUS OF USING SATELLITES TO AUGMENT TRAFFIC CAPACITY OF A WIRELESS NETWORK INFRASTRUCTURE**

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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 592 days.

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(51) **Int. Cl.**
H04B 7/19 (2006.01)

(52) **U.S. Cl.** **455/13.2; 455/430; 455/12.1; 455/452.2**

(58) **Field of Classification Search** 455/12.1, 455/427, 13.1, 13.2, 13.3, 428, 429, 430, 455/13.4, 15, 16, 18, 19, 21, 3.02, 412.2, 455/17, 450, 452.2, 452.1, 453, 517; 370/316, 370/329

See application file for complete search history.

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Primary Examiner—Tilahun Gesesse

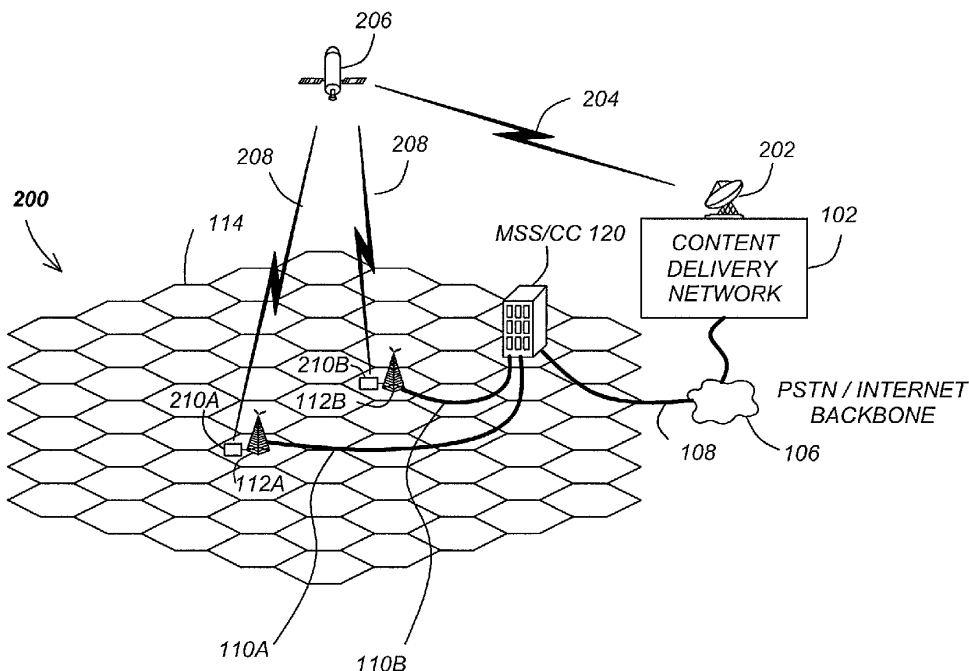
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(57) **ABSTRACT**

A system and method for augmenting a wireless communication network to provide at least a portion of digital data to a user is disclosed. The method comprises the steps of receiving the portion of the digital data in a satellite receiver, providing the received portion of the digital data to at least one of a plurality of terrestrial receivers which form the wireless communication network, and transmitting the received portion of the digital data to a user within a service region using the terrestrial transmitter. The apparatus comprises a satellite antenna, for receiving a signal having at least a portion of the data from a satellite, and a satellite receiver, communicatively coupled to the satellite antenna for detecting and demodulating the signal to produce a portion of the digital data, the satellite receiver communicatively coupled to a terrestrial transmitter in a terrestrial wireless communication network.

24 Claims, 7 Drawing Sheets



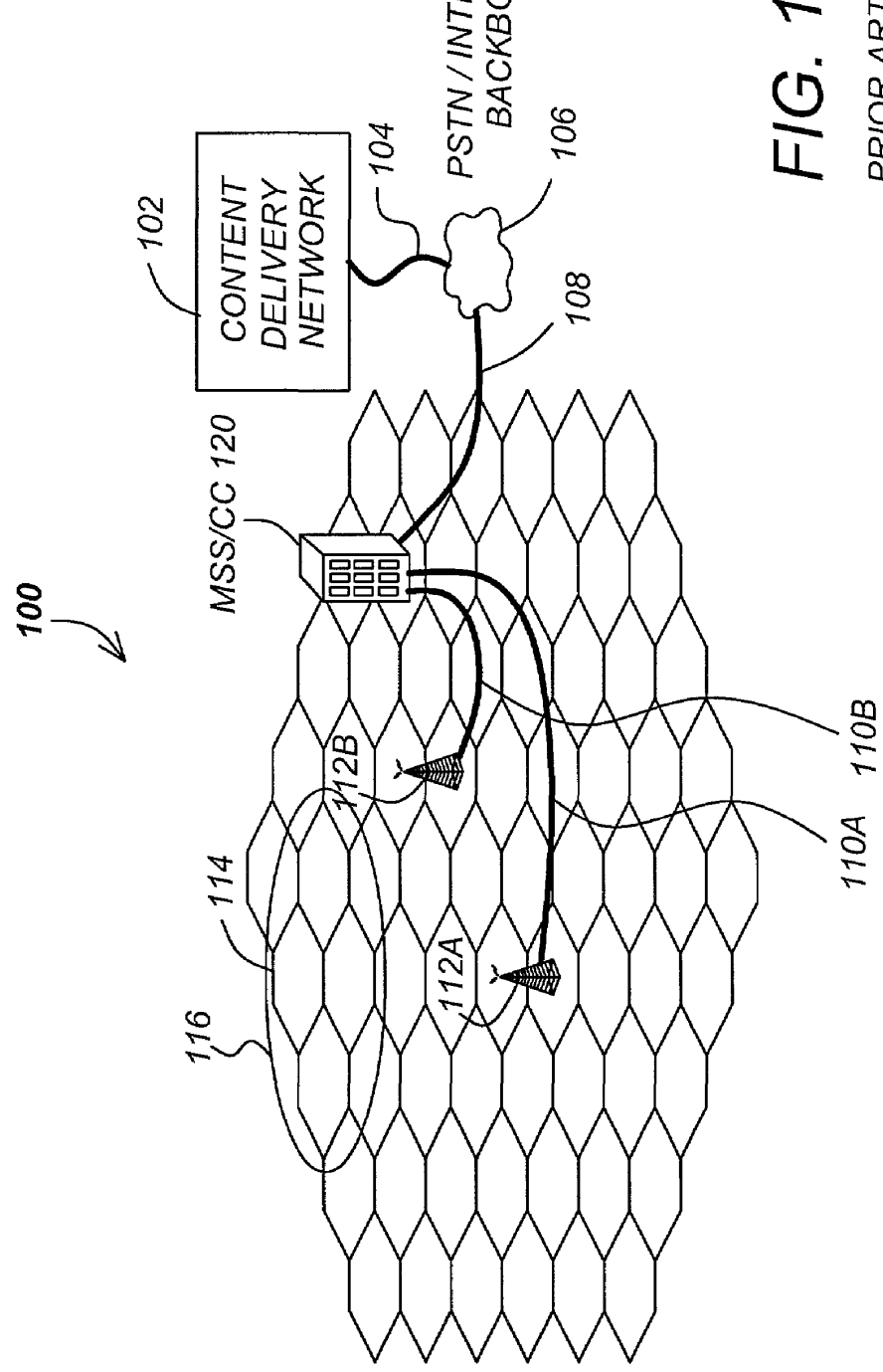


FIG. 1
PRIOR ART

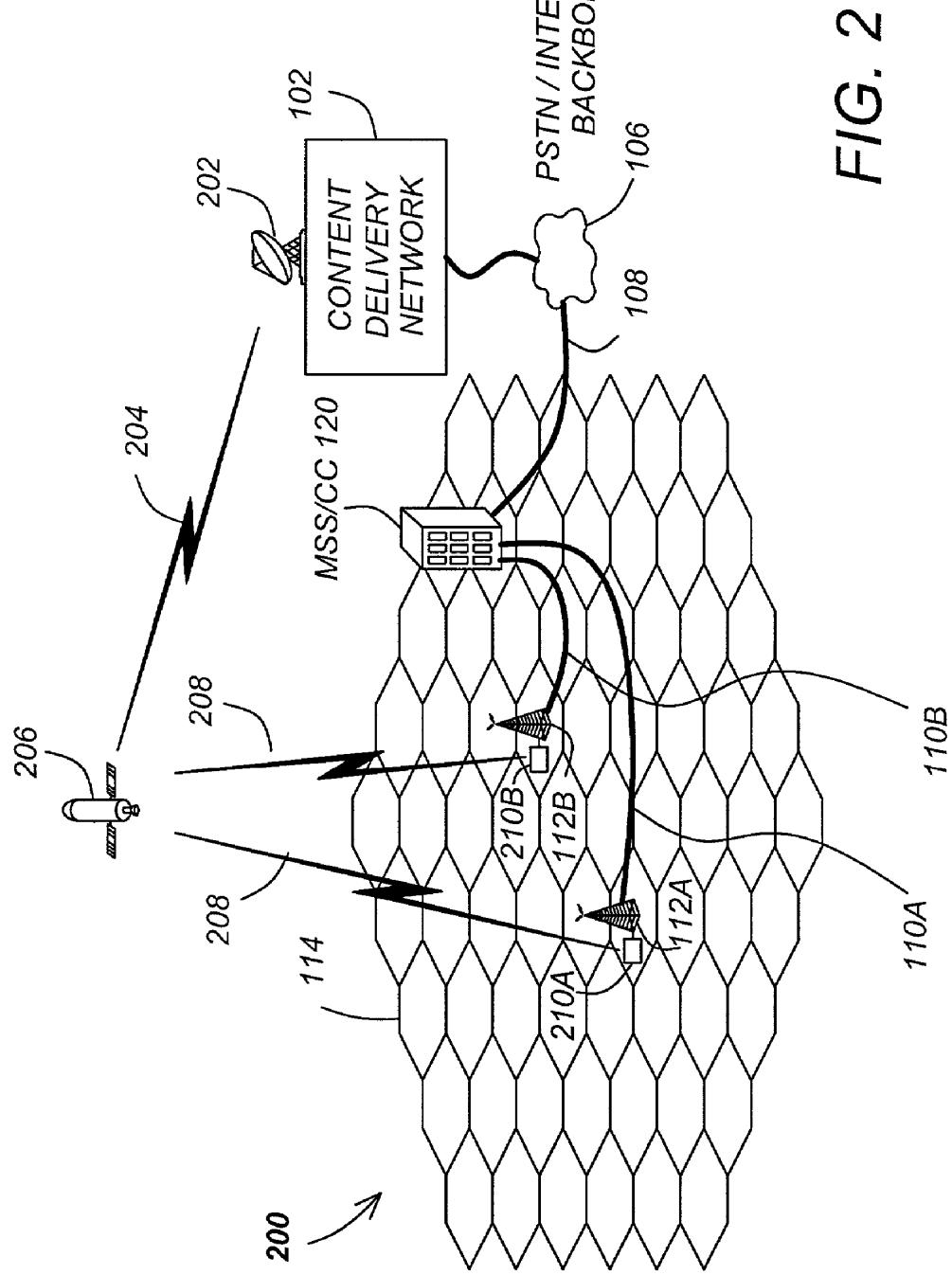


FIG. 2

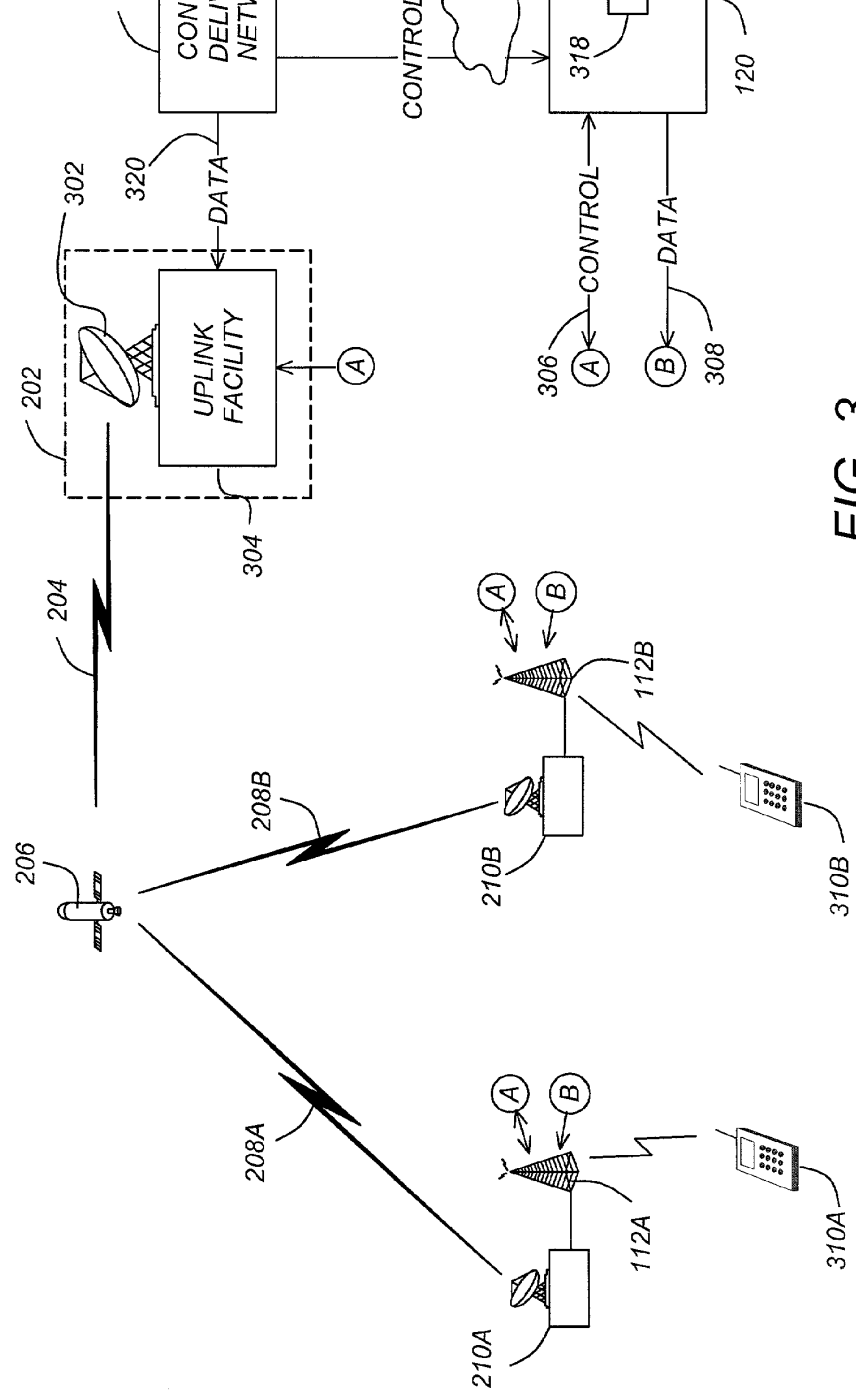
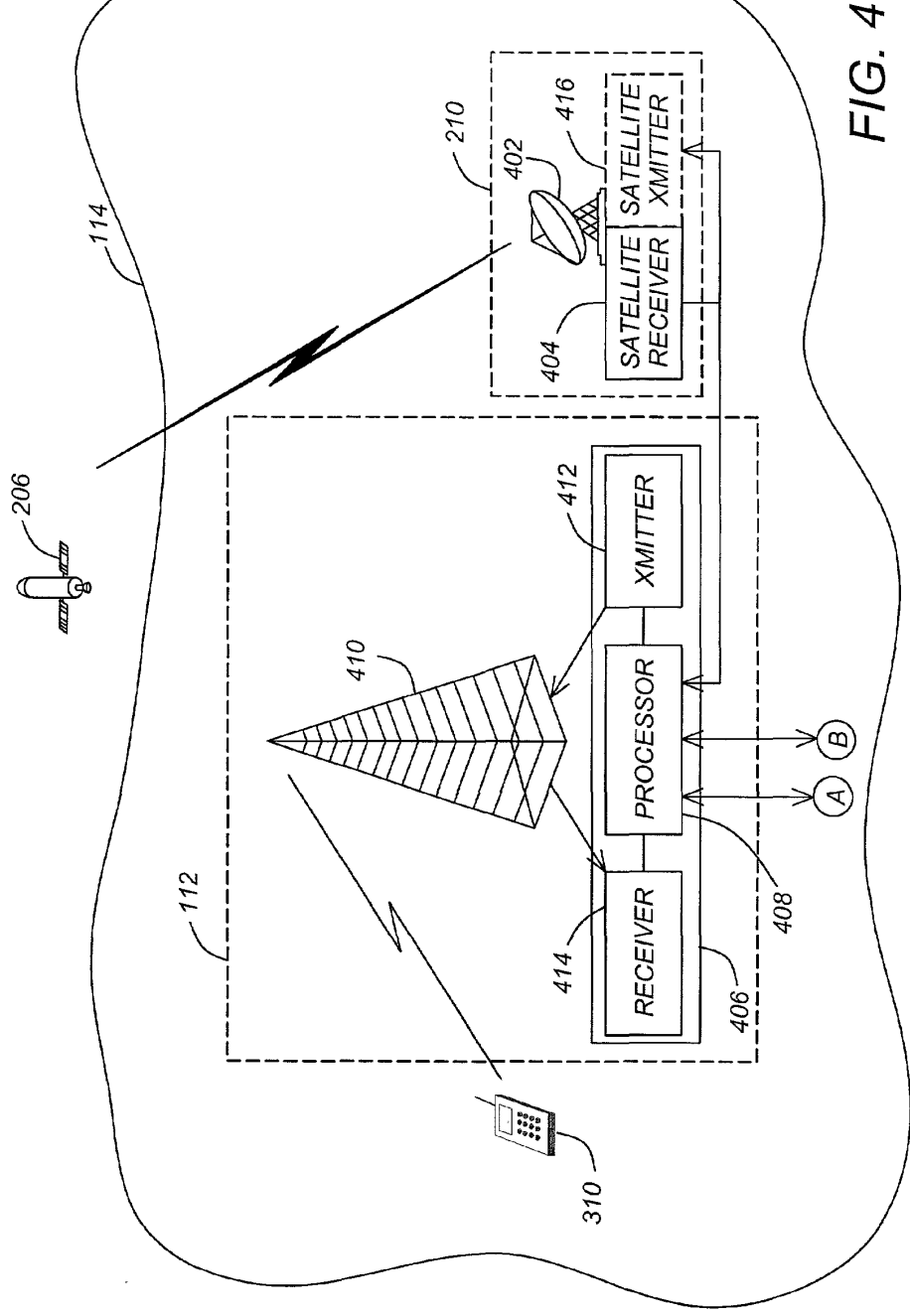


FIG. 3



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