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(54) **DEVICE, SYSTEM, AND METHOD FOR PARTITIONING AND FRAMING COMMUNICATION SIGNALS IN BROADBAND WIRELESS ACCESS NETWORKS**

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Related U.S. Application Data

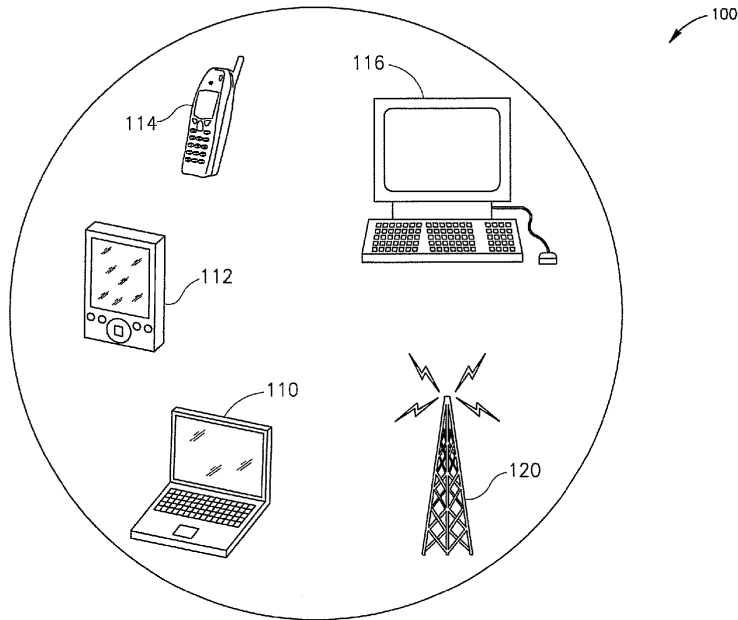(60) Provisional application No. 60/852,891, filed on Oct. 17, 2006.

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(57) **ABSTRACT**

A method and system for partitioning frames into sub-frames, where the frames may be defined according to a reference system standard, and transmitting one or more sub-frames during a pre-designated downlink transmission, and transmitting one or more sub-frames during a pre-designated uplink transmission. A method and system for partitioning frames into sub-frames, transmitting one or more sub-frames including a legacy preamble for communicating with a legacy terminal operating according to a reference system standard during a pre-designated legacy transmission period, and transmitting sub-frames including a supplemental preamble for communicating with a non-legacy terminal operating according to the evolved version of the reference system standard during a pre-designated non-legacy transmission period. A method and system for partitioning each of two or more frames into two or more sub-frames and transmitting the sub-frames for a non-relay transmission including transmitting a (DL:BS->MS/RS) sub-frame during a pre-designated downlink transmission and a (UL:MS/RS->BS) sub-frame during a pre-designated uplink transmission, and transmitting sub-frames for a relay transmission including transmitting a (DL:RS->MS) sub-frame during a pre-designated downlink transmission and a (UL:MS->RS) sub-frame during a pre-designated uplink transmission.
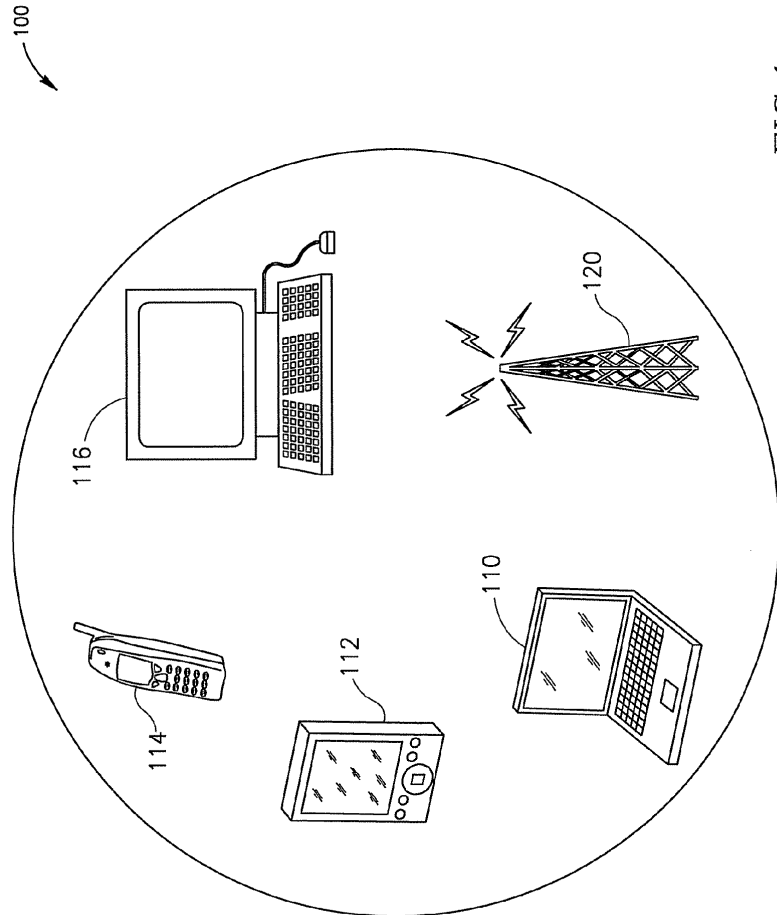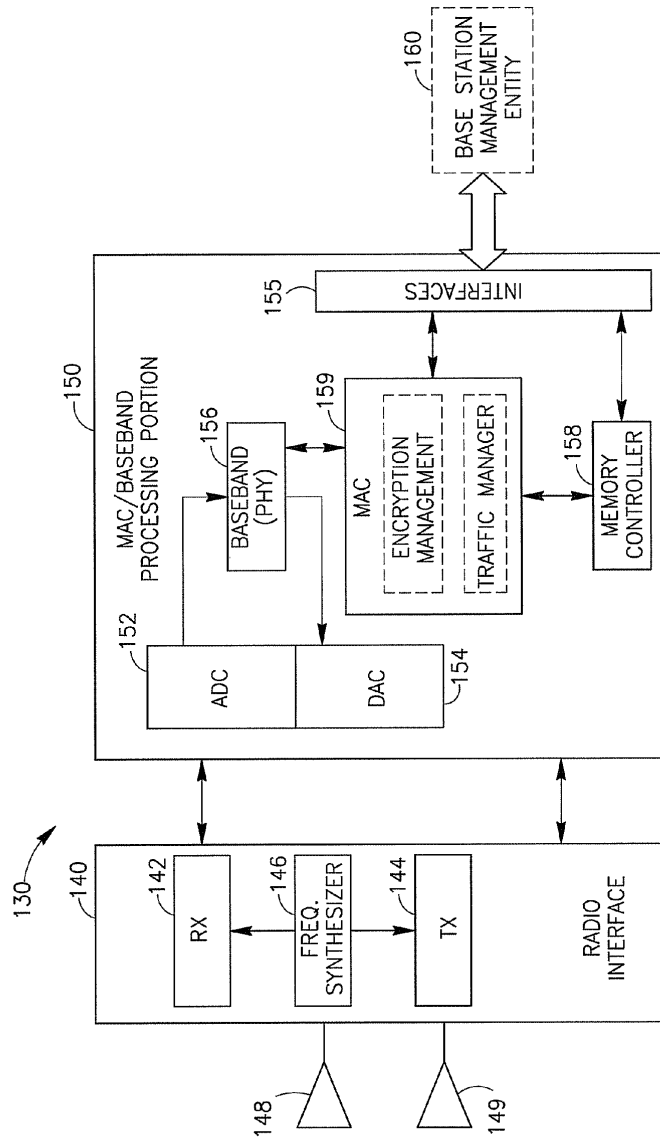
FIG.1

FIG.2
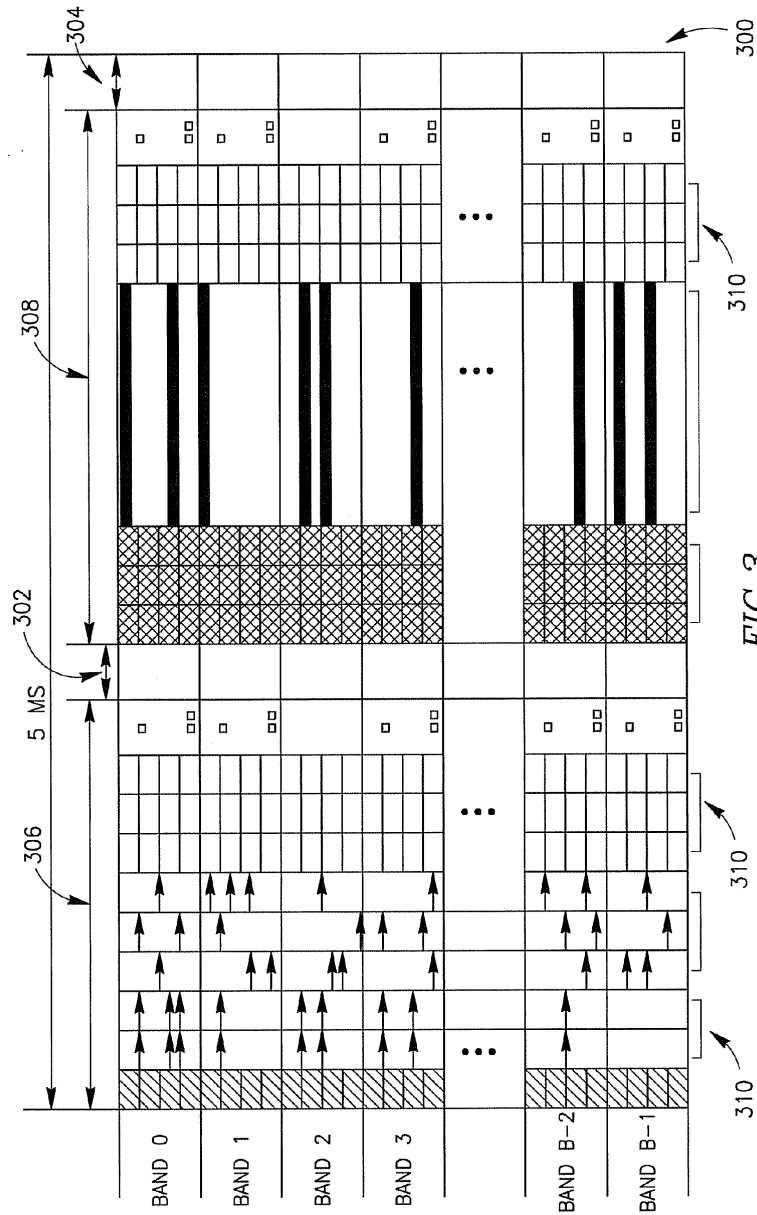
FIG.3

FIG. 4

DOCKET ALARM
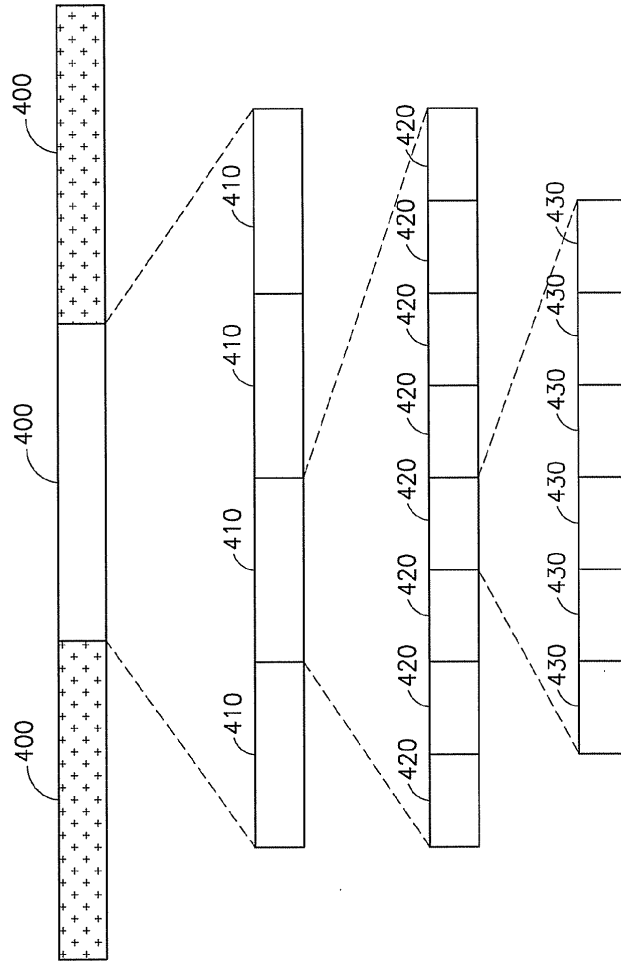
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