

(54) **LEARNING, STORING, ANALYZING, AND REASONING ABOUT THE LOSS OF LOCATION-IDENTIFYING SIGNALS**

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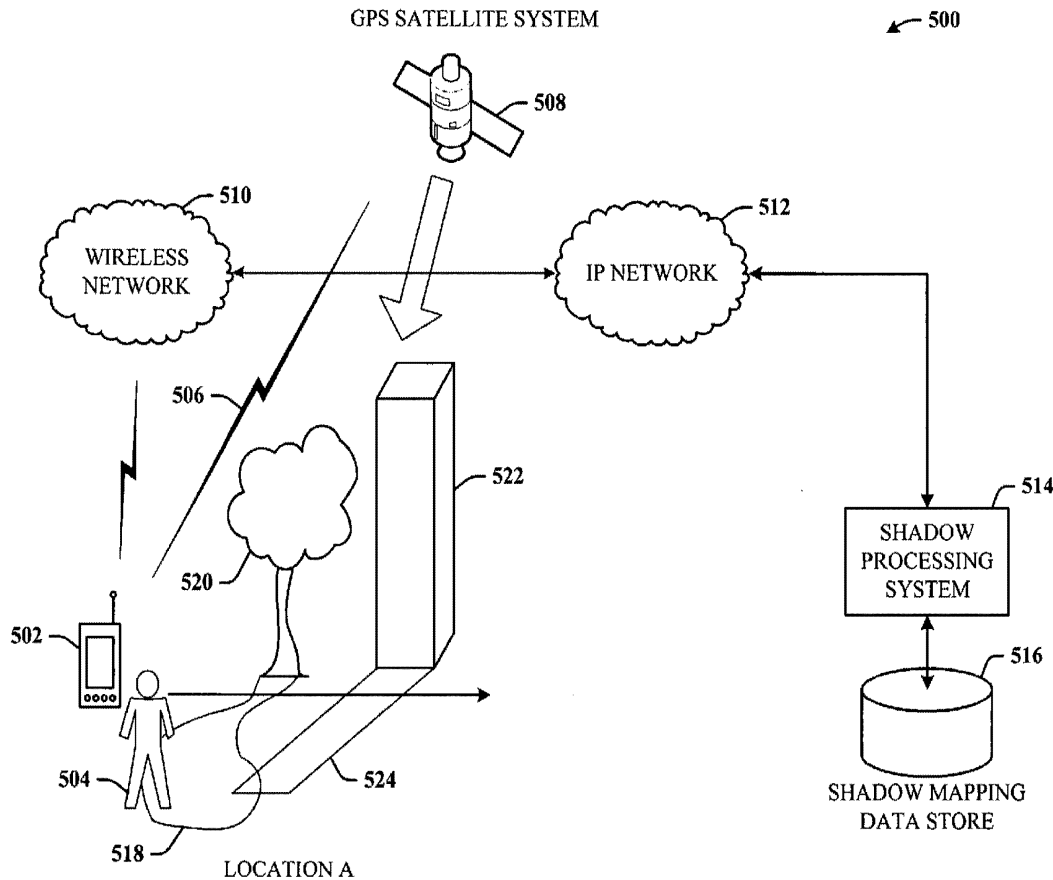
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(57) **ABSTRACT**

A location-centric signal shadow mapping and storing architecture that creates maps where signals, such as GPS, cannot be seen with ease because of natural or synthetic features such as groups of tall buildings. Such maps are used with other information, such as the dynamics of the sensed velocity that had been seen before the loss of the signals, to reason about the location and likely activities being carried out by one or more people. Inferences can be made based on information about organizations and services associated with structures and locations proximal to the locations where signals were lost. Also, such reasoning can be used to turn off or to reduce the power consumed by the receivers of the location information, potentially with the joint use of accelerometers to identify when significant accelerations occur.



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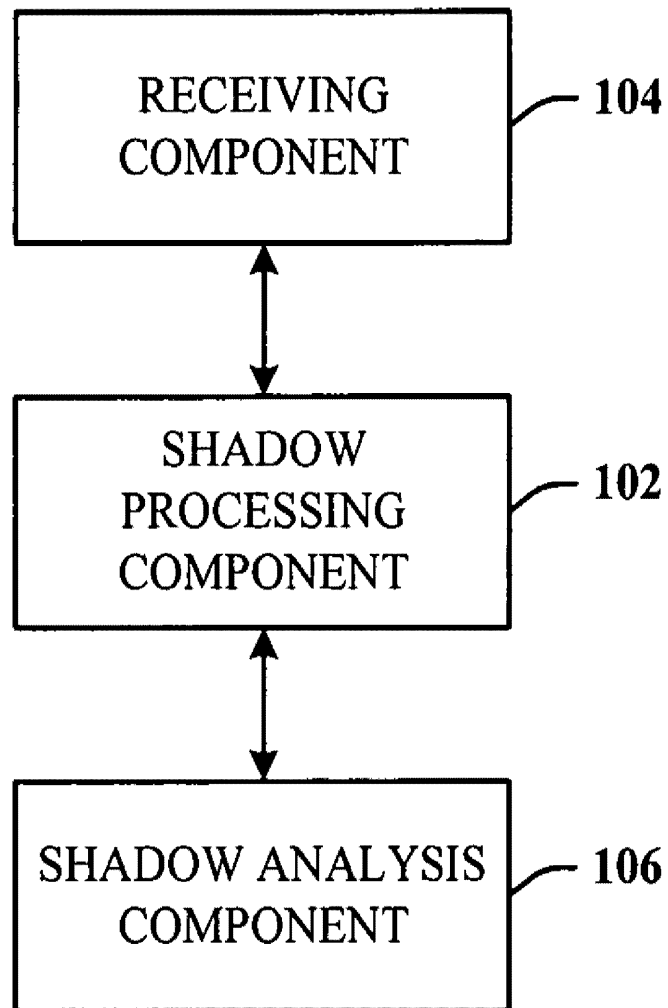


FIG. 1

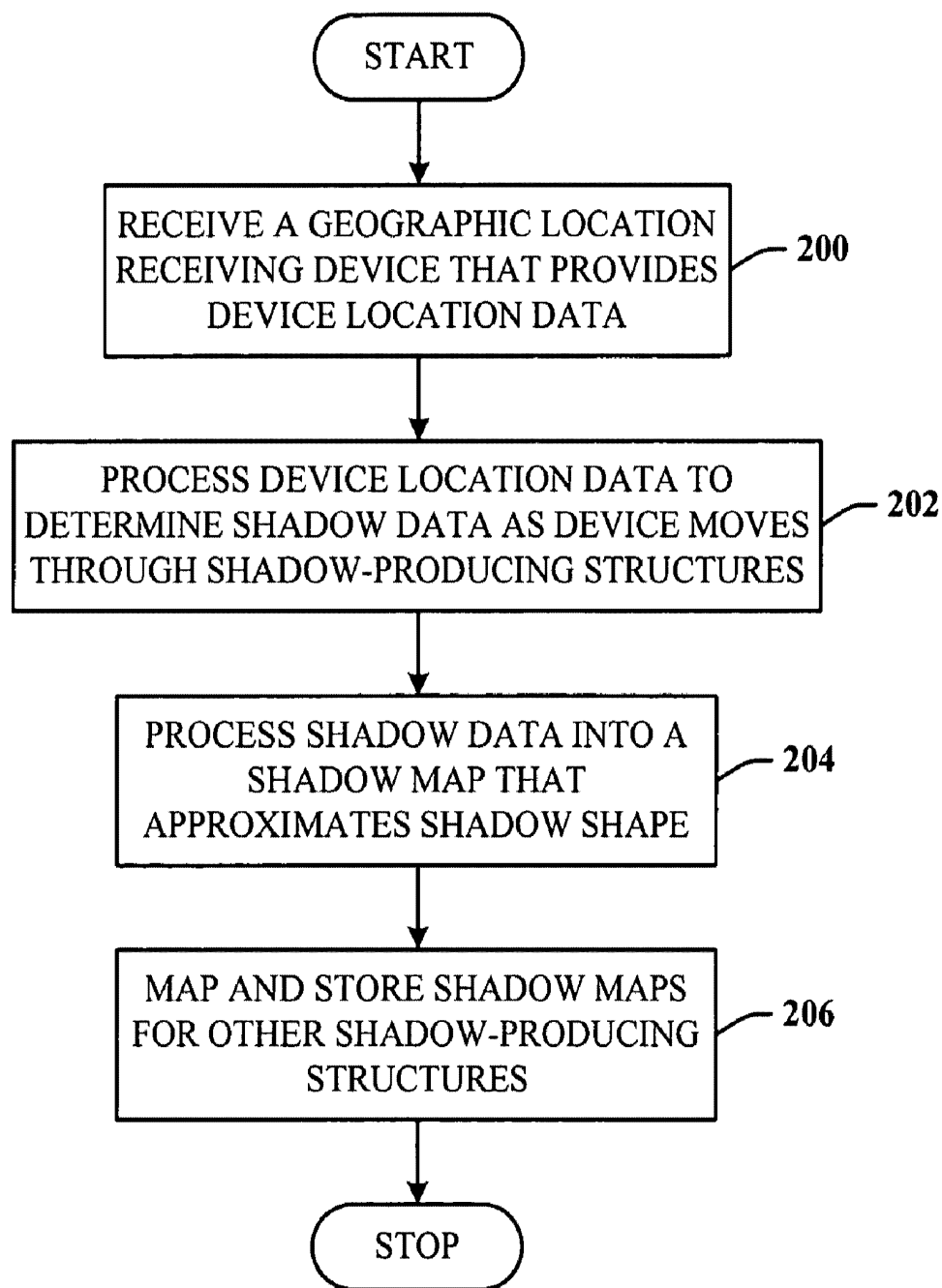
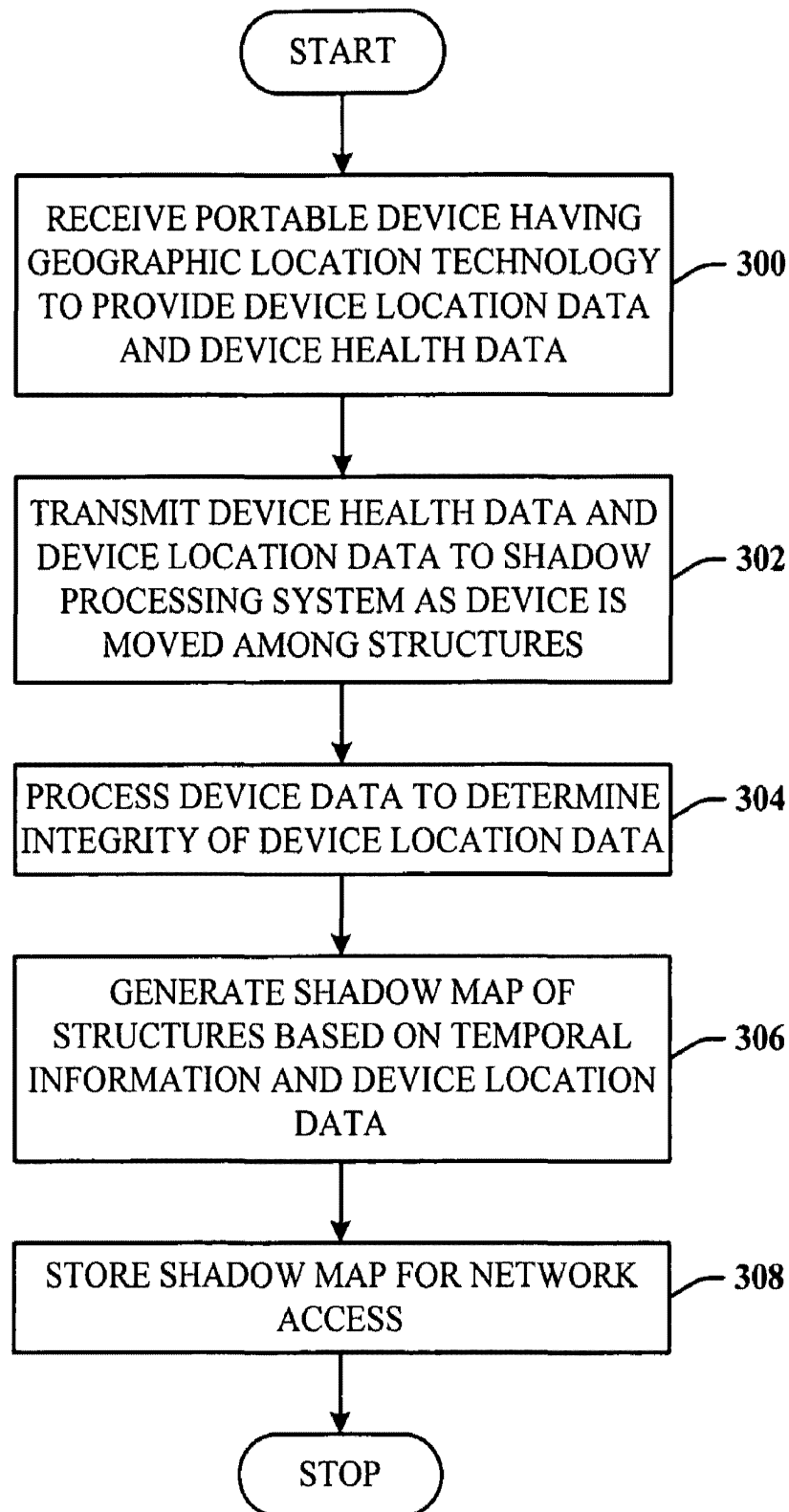


FIG. 2

**FIG. 3**

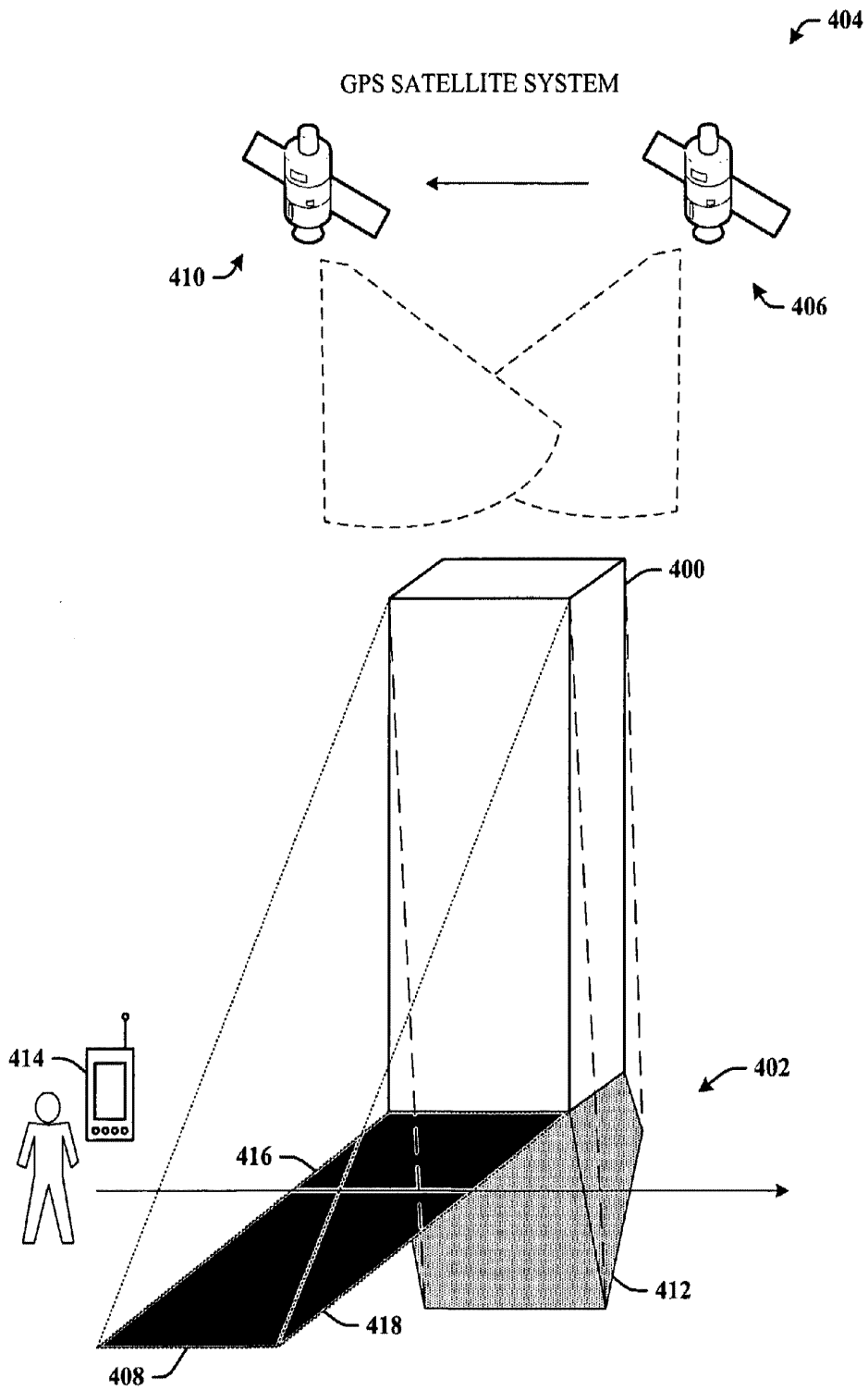


FIG. 4

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