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(54) **METHOD OF REDUCING POWER CONSUMPTION OF A RADIO BADGE IN A BOUNDARY DETECTION LOCALIZATION SYSTEM**

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(58) **Field of Classification Search** 340/572.1–572.9, 340/10.1–10.5; 235/375–385; 455/456.1–456.6
See application file for complete search history.

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(57) **ABSTRACT**

A method of reducing power consumption of a radio badge in a boundary detection localization system is disclosed, in which the radio badge is carried by a tracked target and performs location sampling communication with an infrastructure component of the localization system at the start and end of sampling time intervals such that positions of the radio badge can be estimated. The method includes: determining a velocity of the radio badge; estimating a critical time for the radio badge to reach a critical region through division in which a critical distance from an estimated position obtained at the end of a most recent sampling time interval to the critical region is the dividend, and the velocity of the radio badge is the divisor; and controlling the radio badge to perform location sampling communication with the infrastructure component of the localization system at the end of the critical time.

18 Claims, 3 Drawing Sheets

