

ABSTRACT

PERSONAL INERTIAL NAVIGATION SYSTEM

5

Embodiments of the present invention provides a personal navigation system that integrates an inertial sensor suit which includes a gyroscope and an accelerometer, and a satellite signal receiver assisted by a Digital Signal Processor (DSP) to compute a target user's position based on the data from the inertial sensor suit and/or the received satellite
10 signal. In the event of satellite signals outage, the target user's position can be solely calculated by the DSP with built-in algorithms based on the data from the inertial sensor suit. In the event of satellite signals are available and the dilution of precision is good enough, more accurate position data of the target user can be obtained based on both the data from the inertial sensor suit and the received satellite signals by using a Kalman filter
15 Algorithm.

(Fig. 2)