

A review of navigation systems (integration and algorithms)

ABSTRACT

Significant developments and technical trends in the area of navigation systems are reviewed. In particular, the integration of the Global Positioning System (GPS) and Inertial Navigation System (INS) has been an important development in modern navigation. The review concentrates also on the analysis, investigation, assessment and performance evaluation of existing integrated navigation systems of accuracy, performance, low cost and all the issues that aid in optimizing their operating efficiency. The integration of GPS and INS has been successfully used in practice during the past decades. However, much of the work has focused on the use of a high accuracy Inertial Measurement Unit (IMU), which is an inertial sensors block without navigation solution output, and hence, this research area is also reviewed in this paper.

Keyword: Vehicular navigation; Inertial navigation system; GPS; Inertial Measurement Unit