DEVELOPING AN AUTOMATIC WLAN-BASED GPS MONITORING SYSTEM

Reducing the Costs of Geodetic Monitoring

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Monitoring is one of the main tasks in engineering geodesy. Apart from tachymeters, only GNSS receivers can measure 3-dimensional positions automatically and continuously. Geodetic dual-frequency receivers are expensive, generally costing over EUR20,000. In recent years, however, single-frequency receivers available for less than EUR100 each have proved capable of achieving almost the same accuracy as geodetic ones, thus representing a potential alternative for geodetic receivers. This article introduces the automatic GPS monitoring system which has been developed at the Institute of Engineering Geodesy (IIGS) and presents its initial results.

An overview of the low-cost GPS monitoring system's architecture is shown in Figure 1. The test system consists of three stations: a master (central station) and two clients. The master continuously collects raw data from the two clients via WLAN in real time. The data from all stations are transferred to the central station's computer for processing.

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