VRS-RTK應用於圖根點測設成果分析

－以竹山鎮為例

Analysis of Traversing by Using VRS-RTK –A Case Study of Chu-Shan Township Area

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摘　要

內政部土地測量局自 93 年度起整合國內現有基準站，規劃建置全國性e-GPS (Enhanced Global Positioning System)衛星定位基準站即時動態定位系統，本研究係利用此系統西區服務網，以虛擬參考站（Virtual Reference Station, VRS）即時動態定位技術（Real-Time Kinematic, RTK）（ 簡稱VRS-RTK）檢核實驗區內控制點 7 點與圖根點 35 點，分析成果發現，縱坐標（N）較差絕對值之平均值小於 2 公分，橫坐標（E）較差絕對值之平均值約 17 公分，本研究試以竹山鎮實驗區內控制點 7 點為坐標轉換之共同點，透過四參數轉換(Helmert Transformation)與六參數轉換（Affine Transformation），其N、E坐標較差值均符合 5 公分內精度規範。

關鍵詞：虛擬參考站、即時動態定位。

Abstract

Since 2004, the Land Survey Bureau (LSB) of MOI, has been integrating the existing GPS base stations around the nation to build up a national e-GPS network. The study area is located within the west service net of the national e-GPS real time kinematic network. The 4th and the higher order control points（7 points） and the traverse points（35 points） were examined with the VRS-RTK. Compared with the original data, the obtained results have shown that the average of the absolute value of errors is less than 2 cm at N-coordinate axis while larger than 17 cm at E-coordinate axis After Helmert and Affine transformations for test area either by 4-parameters or 6-parameters, the errors within 5 cm and accord with the demanding precision for traverse layout.

Keyword：Virtual Reference Station, Real-Time Kinematic

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