Accuracy Analysis of Geodetic Control Points Using GPS in Korean Island Zone

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SUMMARY

To solve problems due to the mixed control point systems and their loss in Korea, the reconstruction of Geodetic Triangulation Point(RGTP) had been performed from 1975 to 1986. Currently National Geographic Information Institute(NGII) announces that as a new triangulation point. However, since RGTP for the island area is not completely carried out, confirmation of the reconstruction of geodetic triangulation is required. For this study, JEJU island was selected as a test site and the triangulation points were measured with GPS. Relationship between triangulation points were analyzed by producing new coordinates of triangulation points. The results are as follows: First, it is judged whether triangulation points in JEJU are well matched each other or not and which triangulation points have double results and which do not within the tolerance on the same triangulation points. Second, We have presented a tolerance limit of triangulation points that now are recognized with high accuracy and possibility of application when it is converted into the world geodetic coordinate system. Third, We could confirm that the mismatch between the digital map made by RTK-GPS surveying and the conventional cadastral map is attribute to a mismatch between existing conventional triangulation points. The main purpose of this research is to suggest how these results will be properly applied to cadastral surveying and to clarify how the cadastral control point and the geodetic control network are related to each other, by analyzing the accuracy of control points using GPS and the inconsistencies between present triangulation points in JEJU island of Korean peninsula

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