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INTEGRATED GROUND GRAVITY AND NAVIGATION RTK NETWORK.

Abstract

NPK Kurs JSC has been the head organization in NSAU for the creation of an RTK network since 2016. During this time, a network of 60 base stations has been deployed and a center has been created for processing information from base stations and issuing differential corrections to consumers. software of the Chinese company CHC. At the same time, a ground gravimetric network is being actively created in Europe, which consists of two hundred American-made gravimeters for a country like Poland. The cost of one such gravimeter is more than one hundred thousand US dollars. Unfortunately for Ukraine, such costs are currently not possible. Can an RTK navigation network function as a gravimetric network? In Ukraine, a control and correction station "Gravika" was created and put into operation, which can simultaneously perform the functions of an RTK network base station and an absolute gravimeter. Certification of the control-correcting station "Gravika" was carried out in the National Scientific Center "Institute of Metrology", Kharkov. The certification consisted of comparing the results of simultaneous measurements of a reference ballistic gravimeter and the Gravika control and correction station. The root-mean-square deviation of the measurement results did not exceed 30 Gal. Currently, the Gravika control and correction station is in operation in the town of Zolochiv. During operation, the possibility of simultaneous solution of the problem of high-precision determination of coordinates and the value of gravitational acceleration was confirmed. The creation of a combined ground gravity and navigation RTK network will solve a complete geodetic problem and save hundreds of millions of US dollars.