

GeoNetGNSS, a newly established CORS network in Northern Greece in support of high-accuracy positioning applications

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Abstract. Modern day surveying and mapping applications customarily use GNSS observations to collect positional data for both thematic, lower accuracy, and geodetic, higher accuracy, applications. In the latter case, the increased availability of continuously operating reference stations (CORS) during the last years have offered unique opportunities for every-day surveying and mapping applications, with reduced costs and improved accuracies. In the frame of the GeoNetGNSS project, a newly established network of CORS stations has been planned to cover the geographic area of the Region of Central Macedonia (RCM), Greece. The main scope of the project is to establish the necessary infrastructure, perform additional GNSS/Levelling and gravity observations, integrate the new CORS stations to national, European (EUREF) and global (ITRF) reference frames, and finally deliver high-accuracy horizontal positions and orthometric heights in both real-time kinematic, rapid-static, based-rover and PPP modes. The latter refer to both geodetic and surveying, as well as, to mapping applications with UAVs and drones. In the present work we describe the main steps for the establishment of the CORS stations, first results acquired from the analysis of the collected observations, as well as results from the first campaigns in the wider area of RCM to collect collocated GNSS/Leveling and gravity observations in support of developing a high-resolution and high-accuracy geoid model.