

## QUALITY ANALYSIS OF GNSS OBSERVATIONS OF REFERENCE STATIONS NETWORK WITH THE TEQC UTILITY

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The measurements of Global Navigation Satellite System (GNSS) obtained from different reference stations: Novosibirsk Region reference stations network, Russian state reference stations network – Fundamental Astronomical and Geodetic Networks (FAGN) and stations of International GNSS service (IGS) are checked and analyzed. The relevance of the usage of regional (commercial or industrial) reference stations in state foundation geodetic framework for formation of a unified system of coordinate-time and navigation support is shown. The article describes quality analysis results of the GNSS measurements by the main criteria: number of rejected measurements, ionospheric delay, multipath effect, signal-to-noise ratio, receiver clock slips. The main errors affecting satellite measurements are estimated. The conclusions about the possibility of including the Novosibirsk Region reference stations network into one of the levels of the state foundation geodetic framework are drawn. The comparison of quality of the GNSS measurements showed that according to all criteria of quality the GNSS measurements of the Novosibirsk Region reference stations network are not worse than GNSS measurements of FAGN. According to all criteria the GNSS measurements of the Novosibirsk Region reference stations network approximately corresponds to GNSS measurements of IGS stations, except the signal-to-noise ratio criterion.

**Key words:** Global Navigation Satellite Systems, GNSS observations, quality checking of GNSS observations, reference station, reference stations network, Teqc utility.

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