



## Real-time PPP with Open Networks - Structure and Status of an RTCM Complying Operational Implementation

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Since an RTCM standard for streaming GNSS data first became available in 2004, a steadily growing number of well distributed reference stations provide free real-time access to satellite observations. These global resources enable the estimation and dissemination of correctors for broadcast orbits and clocks. Corrections can be encoded in new RTCM messages under development to match specifics of the so-called State Space Representation (SSR) approach. As a result, Open Data Policy networks and emerging client software complying with RTCM standards permit real-time Precise Point Positioning (PPP) world-wide in the public domain – until recently the sole activity of a very few service providers.

The paper describes recent efforts in the real-time PPP sector based on a premature RTCM standard and carried out in a cooperation of TUP and BKG. The major characteristics of a PPP server, a stream dissemination system, and a PPP client program are presented. Introduced tools utilize the latest NTRIP version 2 standard for GNSS stream transport.