



## **Real-time Water-Vapor and TEC calculation using GNSS reference station infrastructure**

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CORS (Continuously Operating Reference Station) networks are primarily used for the calculation of real-time high accuracy correction data for measurements made by surveyors using satellite positioning equipment. The reference stations installed today track signals of multiple GNSS (Global Navigation Satellite Systems) such as GPS (Global Positioning System) and Glonass. This type of GNSS Infrastructure is available in most European countries with countrywide coverage. GNSS signals and their propagation are subject to propagation delays caused by the Atmosphere. Modeling atmospheric conditions is a major point to be considered when improving the accuracy of GNSS measurements. Troposphere and Ionosphere models have been developed to handle these tasks. Using existing GNSS Infrastructures to calculate the Water Vapor content contained in the Troposphere and the Total Electron Content contained in the Ionosphere in real-time is one of the latest developments for GNSS infrastructures. With the Trimble Atmosphere App the IPWV (Integrated Precipitable Water Vapor) and TEC (Total Electron Content) values are calculated in real-time. This session gives an overview of the required input data to calculate the IPWV (Integrated Precipitable Water Vapor) and TEC and how this input data is collected. The workflow in the software is presented showing the different steps from the GNSS observation to the final result. Finally results of the IPWV and TEC real-time calculations are presented.