

## Overview of ionospheric total electron content (TEC) monitoring system using dense GNSS receiver networks

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We are operating an ionospheric total electron content (TEC) monitoring system using dense GNSS receiver networks on the NICT Science Cloud system. We have automatically collected more than 7000 ground-based GNSS receivers' data in the world, and converted into two-dimensional TEC maps. High-resolution TEC maps are available in Japan, North America, and Europe, where GNSS receivers are densely deployed. These TEC maps and global TEC maps are available through the web site, <http://seg-web.nict.go.jp/GPS/DRAWING-TEC>. These high-resolution TEC maps make it possible to get a full view of 100-1000 km scale ionospheric disturbances. Recently, we developed a real-time TEC monitoring system by processing streaming data of GEONET, which is a ground-based GNSS receiver network in Japan provided by Geospatial Information Authority of Japan. TEC are calculated within a delay of several minutes.

Keywords: TEC monitoring system, dense GNSS receiver network, GEONET real-time data