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E-GVAP, status and future

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E-GVAP is the EIG EUMETNET GNSS Water Vapour Programme. It is an operational service providing GNSS atmospheric delay estimates (zenith total delays, ZTD) for use in weather forecasting in near real-time to the European meteorlogical community. At the present time E-GVAP coordinates the delivery of around 3000 ZTD estimates in near real time primarily for sasimilation in regional and global numerical weather prediction (NWP) models. Assimilation of ground-based ZTDs in NWP is found to increase the skill of the weather forecasts, and whilst other customers exist, NWP remain the main customer of the E-GVAP Programme. Whilst the focus is of course on European NWP, a number of European national met services also operate Global NWP models and E-GVAP also acts to access and coordinate data on a global scale.

E-GVAP is based on a close collaboration between geodetic and meteorological institutions to allow access to data and expertise from geodesy to meteorology. A Memorandum of Understanding exists between E-GVAP and EUREF to coordinate access to raw GNSS observations on a longer timescale.

In this presentation we review the current state of the art in Europe and assess future prospects. Currently, preparations are being made for the next phase of E-GVAP, which will run from 2019 to 2023. In the next phase, estimation of slant total delays (STDs) will also be included and their impact in regional NWP models will be assessed. There will also be an increasing focus on timeliness, as many of the high resolution weather models being developed require faster access to atmospheric observations than is the standard for current models.