



Operational GNSS systems and products at the UK Met Office

Jonathan Jones and Owen Lewis

Met Office, Observations R&D, Exeter, United Kingdom (jonathan.jones@metoffice.gov.uk)

The Met Office runs and operates 5 GNSS processing services which routinely processes GNSS data from hundreds of sites around the world for different applications. The majority of the raw GNSS data is accessed either by way of a major international organisation such as the EUREF EPN or the IGS or by way of an agreement or a Memorandum of Understanding (MoU) with a national mapping agency. These agreements are a foundation of intergovernmental resource sharing allowing both parties to benefit from expertise and infrastructure in different government departments.

The main customer of the derived ZTD products is the Met Office Numerical Weather Prediction (NWP) models with data assimilated in both Global and regional (UK-specific) models. This presentation provides an overview of the Met Office GNSS systems, provides an overview of the products and demonstrates the positive impact GNSS tropospheric products have in NWP both in terms of total NWP impact and also in terms of impact on a per-observation basis. In addition to the NWP customer, ZTD is also converted to Integrated Water Vapour (IWV) using surface observations and products are made available to the forecaster community to aid humidity field monitoring and forecasting which is particularly relevant in high-humidity, convective situations.

As well as the tropospheric systems, the Met Office also processes GNSS data for space weather applications delivering Total Electron Content (TEC) estimates hourly, again on a regional (UK) and global scales.

This presentation gives an overview of all the Met Office systems, products and their applications as well as highlight future areas of work such as GNSS-reflectometry.