

Advancing the geodetic infrastructure in Europe through EUREF

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Abstract. EUREF's (IAG sub-commission 1.3a for Europe) primary mission is to define, realize and maintain the European Terrestrial Reference System 1989 (ETRS89) and the European Vertical Reference System (EVRS) for scientific and practical purposes in Europe.

This is primarily done through the EUREF Permanent GNSS Network (EPN), while the physical height system EVRS is realized through common adjustment of the Unified European Levelling Network (UELN). All contributions to EUREF are provided on a voluntary "best effort" basis, with more than 100 European bodies (agencies/research institutes) involved.

EPN consists of more than 350 continuously operating GNSS stations, supported by Data and Analysis Centers and a Central Bureau. The backbone EPN has been complemented with additional national CORS networks. The dense European network (EPND) incorporates ten times more stations as the core EPN.

In the presentation we will discuss current and future challenges regarding continental scale geodetic infrastructure and the contribution from EUREF. Due to the availability of the ITRF2020 and reprocessed orbit and clock products, a consistent reprocessing of the entire EPN from 1996 to the present is imminent. Strategic options for this analysis (EPN-Repro3) will be briefly discussed. We will also mention the development of a European Height Reference Surface, models for crustal deformations, realization of the emerging International Height Reference System (IHRS) in Europe.

Current needs, like the proper application of the European Union's General Data Protection Regulation (GDPR), and future developments like the integration of GNSS and InSAR will be touched, as well as the future role of EUREF in the emerging organizational landscape, where the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) Subcommittee on Geodesy, UN GGIM: Europe and the European Plate Observing System (EPOS) are important partners.