



## **On the combination of neutral atmospheric delay estimates from different solutions**

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Zenith Total Delay (ZTD) estimates are determined on a regular basis by several processing centers. For example, the IGS Analysis Centers have all their own independent ZTD solutions but, unlike other estimated parameters (e.g., orbits and satellite clocks) they are not combined (the official IGS ZTD product is the result of an independent and dedicated solution). On the other hand, EUREF performs combination of ZTD estimates on a regular basis as well as the IVS, which combines ZTD estimates coming from VLBI sessions. Are there advantages of combining ZTD estimates over not combining them? There are two possible aspects to be investigated. First, the combination can be seen as a tool for quality control. Second, the combination can be seen as a way to derive a consistent and reliable time series of ZTD estimates. This work assesses both aspects. It involves the generation of combined solutions, from independent GNSS-derived ZTD estimates, and their analysis in an attempt to assess eventual advantages from the combinations. A great emphasis is given to judge whether there is any loss of information as a result of the combination or, rather, whether the combined solution is somehow stronger, particularly over the long run. Assessment involves time and frequency domain analysis. This is a work in progress and first results will be presented and discussed in this presentation.