IGS Weekly solutions: Problems and issues

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One of IGS goals is to provide the highest quality data and products to the users. This is achieved with over 200 voluntary participating agencies contributing observing stations, data/products repository, and/or analysis. The organization has been as open and inclusive as reasonably possible. Specifications and guidelines are available to the participants. For example, network guidelines are generally followed and have sometimes to be adapted to local restrictions. There is 8 Analysis Centers (AC), using for the most part their own in-house software to generate the IGS products. The 6 independent analysis software packages are used to generate the products. Along with the Global Network Associate Analysis Centers (GNAAC), they are also used to provide some quality assurance for the combined products. Every time more than one AC uses a station, the same code and phase measurements are reused, resulting in solutions that are not independent. The consistency between the solutions for the station coordinates is 1-2 mm for the horizontal components and 5-10m for the vertical component for weekly network solutions that includes about 250 stations. From week to week, the ACs estimated station coordinates, ERP's and geocenter differences tend to have a random walk behaviour. In parallel with the gradual increasing number of stations, the products consistency has improved significantly over the years due to equipment/network as well as software improvements. Each software improvement, potentially introduces some inconsistencies in the products time series (e.g. coordinates & ERP's). The improvements are often required by modeling refinements, rapid usage expansion and ever more demanding users. The presentation will discuss those and other issues related to the IGS weekly analysis.