

Comparative Error Analysis Workshop

Data Collection Procedures

This workshop will attempt to address the above referenced topics with the following activities:

1. We will set up a test course around Westport Plaza, setting three primary control stations (with fixed MCS83 coordinates). We will also set up six secondary stations with unknown values. Some of these stations will be in readily accessible locations (with open sky). Others will be set in peripheral locations, with marginal (limited) constellation visibility.
2. Coordinates for the primary stations will be determined by static GPS survey observations run through the National Geodetic Survey Online Positioning User Service (OPUS)
3. Coordinates for the secondary stations will be determined by individual users utilizing one of the two primary collection systems, a two-unit base & rover system or a one-unit system employing the Missouri Highways and Transportation Commission Global Navigation Satellite Real Time Network. (All observations being made using plumb receiver poles and bipods.)
4. Additional coordinates for the secondary stations will be determined by individual users employing IMU tilt compensation units. One set will be collected using a fixed location model (a receiver pole stabilized by a bipod but tilted out of plumb).
5. A second set of tilt correction coordinates will be determined by applying a drift location model (a handheld pole allowing for some swaying or movement).
6. Unadjusted coordinates will be collected by the group's party chief and provided to the analyst. After processing the data, a presentation on the results of the comparative error analysis will be given on Saturday afternoon.
7. As part of a separate exercise from the workshop's drone collection session, a set of coordinates for each station will be extracted from drone collected cloud data and will be compared against the results of the primary error analysis.