

Differential correction eliminates known amounts of error from rover data (the user) as recorded by a base station.

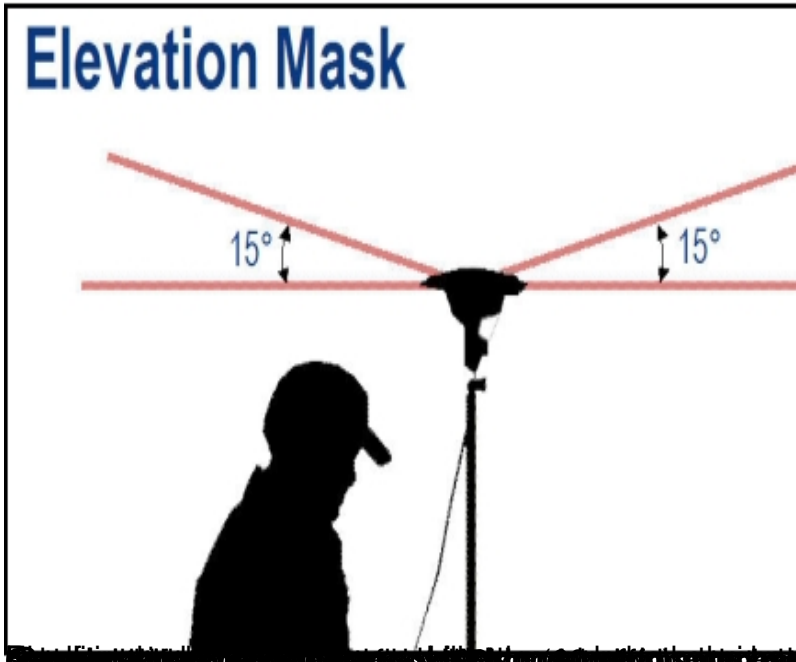
Base Station

A **base station** is a second receiver at a known, surveyed location. In most cases, this second receiver is owned and operated by a public or commercial entity and makes the data available to you, the user. It is possible for you to set up your own base station if one is not available.

A base station continually calculates its position as reported by the satellites. Since the base station remains stationary, it can calculate the difference between the location GPS-reported position and its true, surveyed location. Differential correction subtracts this same known amount of error from your GPS data. Data can be corrected immediately in the field against a real-time correction source such as WAAS or corrected later in the office against downloaded base files. While real-time corrections are ideal for immediate needs such as navigation in the field, it is usually less accurate than post-processing. When the best available accuracy is desired, upon return to the office, post-process your real-time data against stored base station files.

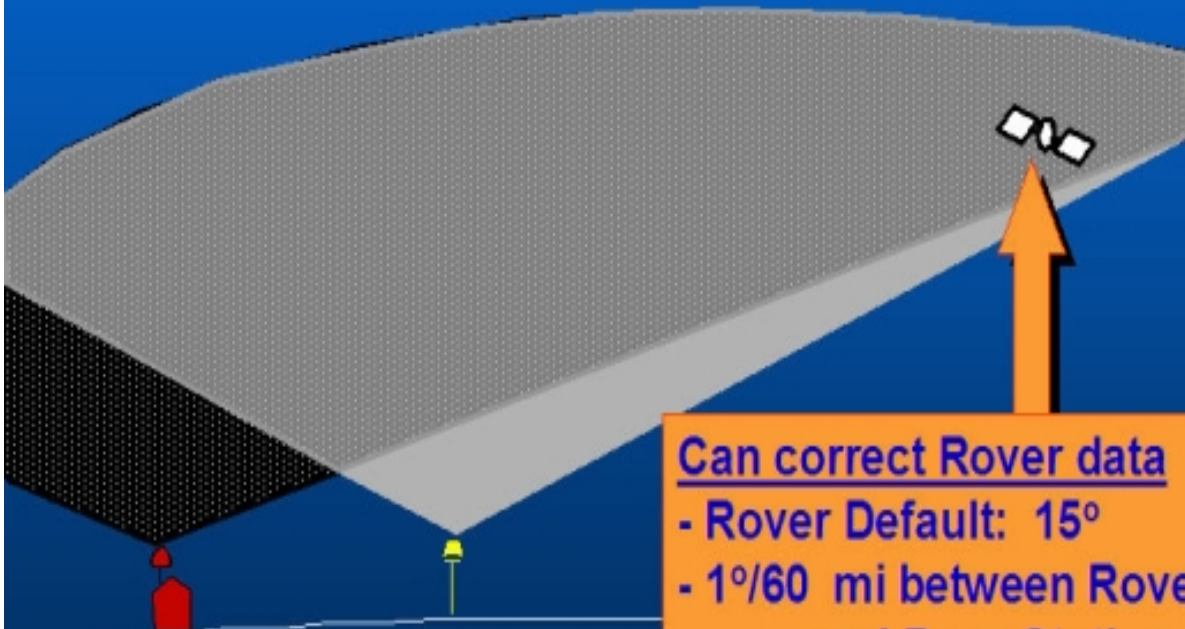
For post-processing, CORS (continually operating reference stations) are held to the highest standards and are the recommended base station. CORS are referenced to a local epoch of NAD83(CORS96). The reference datum of stations other than CORS may vary and may provide mixed results with the PFO differential correction utility. Anytime corrections are applied via real-time or post-processing, the GPS data may take on the spatial reference of the correction source. Therefore, proceed carefully when collecting and processing all GPS data.

Elevation Mask



Elevation Mask

Rover > Base Station



Base
Station

Rover

Can correct Rover data

- Rover Default: 15°
- 1°/60 mi between Rover and Base Station
- if Base Station at 10°, then Rover can go 300 miles