

CHASTAIN-SKILLMAN JOINS AS A PARTNER IN THE FLORIDA STATEWIDE TOPNET RTK NETWORK

By Robert F. DuBois, PLS



Chastain-Skillman has joined as an owner-partner, along with forty other partners, to form a state-wide Global Positioning System (GPS) network by purchasing and hosting a base receiver and antenna at our Lakeland office location. Chastain-Skillman will be the exclusive provider of the network in the Lakeland and surrounding areas with privileges granted to all our offices. The network is designed to allow each partner and subscriber the exclusive privilege to receive correction information to use the Real Time Kinematics (RTK) surveying method utilizing GPS technology.

The current network consists of forty-one partner-owned base stations throughout the state of Florida. Each base station transmits a correction factor that the partners and subscribers of the network receive by wireless modem. The correction factor is directly transmitted to the field personnel on the project site. The correction factor is required to be applied to correct the ambiguities in the GPS signal for accurate RTK surveying. Correction factor permits the field personnel to work without post-processing the surveying data. Transmitted correction factors will be received, and acceptable accuracies will be achieved within an approximate twenty-five mile radius from a base station. Utilizing professional surveying practices, one base point may be used to survey vast areas by incorporating only one GPS receiver into the surveying effort. Additional receivers may be used on the same project to expedite the surveying.

Prior to the conception of the GPS network, performing a GPS survey required the configuration of a minimum of two receivers, within a limited 3 to 6 mile range of each other: one receiver dedicated as a temporary remote base station receiver and the other as a rover receiver. The base station receiver would be placed in a remote area, with extensive effort invested to protect the receiver from being tampered with, or even stolen, while the survey is being performed. On each day of the project, the temporary base station would have to again be set up for that day's surveying activities. In some cases, the sites for the remote base may be miles away from the surveying project. The roving receiver is used directly by the surveying team to collect relative information for the project.

The GPS network has eliminated the need for a temporary remote base station and all the associated effort. The receiver previously utilized for temporary remote base station duty, may now be utilized as an additional rover receiver to either double the amount of information gathered, or as a receiver for another simultaneous project. Also, the restriction of distance from a base is practically eliminated.

Currently, Chastain-Skillman utilizes four Topcon rover receivers on the network and one stand-alone Trimble GPS rover and base receiver combination. With the addition of two 4x4 utility vehicles and reduced limitations of GPS correction factors, access for surveying is virtually unlimited.

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