

Mauritanian HV Electric Transmission Corridor to be Surveyed with SP60 GNSS Receiver



The Spectra Precision SP60 GNSS receiver has been selected to perform survey work for construction of a new 450km electric power transmission corridor. Connecting Mauritania's two largest cities, the capital Nouakchott and to the south Nouadhibou, the 225/90Kv transmission line parallels the Atlantic Ocean as it traverses the Sahara Desert. The Mauritanian Electricity Company, SOMELEC, through its contracting company, awarded the sub-contract for surveying the transmission line and infrastructure to ETAFAT, a geospatial data acquisition and processing firm.

Difficult work conditions, including high heat (over 45°C) and the lack of existing control points, were key factors in ETAFAT's selection of the SP60 receiver. Because of the absence of existing benchmarks along the entire corridor, the SP60 RTX feature played a

key role to ensure homogeneity in the coordinate reference frame between the two cities. The RTX technology leverages real-time data from a global tracking station network with innovative positioning and compression algorithms to compute and relay satellite orbit, satellite clock, and other system adjustments, transmitted to the SP60 via satellite or IP, to deliver real time high-accuracy corrections, even in remote locations.

Two methods

ETAFAT tested the SP60 data with RTX corrections and obtained consistently successful results. The geodetic survey was related to several Ground Control Points (GCP) used in airborne survey. The measurement itself was conducted using two methods, dependently: the classical statistical method, and the RTK GNSS method. The SP60 met or exceeded the required +/- 15 cm order of accuracy.

According to baseline processing and adjustment reports, the SP60 delivered superior results under all conditions, and it did especially well under typical high temperatures of the Sahara Desert. Initialization was well within 5 to 10 seconds for RTK survey with radio signal coverage inside a 5 km radius.