

CASE STUDY - JANUARY 2018

## MAURITANIAN POWER TRANSMISSION INFRASTRUCTURE TO BE SURVEYED WITH SP60 GNSS RECEIVER

**Nouakchott, Mauritania, (January 2018)** - The Spectra Precision SP60 GNSS receiver has been selected to perform survey work for construction of a new 450-kilometer 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.

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.



### HIGHLIGHTS

**Location :** Nouakchott is the capital and largest city of Mauritania. It is one of the largest cities in the Sahara

- Construction of a new 450-kilometer electric power transmission corridor. Connecting Nouakchott and Nouadhibou,
- RTX technology leverages real-time data from a global tracking station network
- SP60 delivered superior results under all conditions



#### ABOUT ETAFA

Headquartered in Casablanca, Morocco, ETAFAT ([www.etafat.ma](http://www.etafat.ma)) is a continent-wide leader in the acquisition and processing of geo-spatial information, specializing in innovative technologies in geomatics.

#### ABOUT GEOTECHNOLOGIE

Founded in 2014, GeoTechnologies has become one of the leading distributors of professional GNSS systems and surveying instruments in Morocco, serving more than 1,500 customers. governments, public authorities and utilities, construction and consulting companies, consulting companies telecommunications, universi-

#### ABOUT SP60 GNSS RECEIVER

The Spectra Precision SP60 GNSS receiver offers a high level of flexibility to cover any demand from GIS all the way up to sophisticated RTK and Trimble RTX™ capable solutions. Combining the unique all-signals tracking and processing Z-Blade GNSS-centric technology and L-band capability for satellite-delivered Trimble RTX correction services, the SP60 receiver provides the most reliable measurements and the highest possible accuracy under virtually any conditions.

#### ABOUT THE SPECTRA GEOSPATIAL BRAND

Spectra Geospatial is an established brand known for delivering quality products to the survey, GIS and construction markets. Focusing on the specific needs of the conventional surveying market, the Spectra Geospatial brand offers a complete product portfolio including Global Navigation Satellite Systems (GNSS), Global Positioning Systems (GPS), optical total stations, data collection hardware, field and office software, as well as a wide range of construction tools.

Spectra Geospatial surveying equipment is an economical choice that utilizes technologies for optimal efficiency. With convenience and reliability as the foundation of the Spectra Geospatial brand, it is an ideal choice for value. The Spectra Geospatial brand is backed with the strong technical support that users have come to expect from a quality name in surveying and construction.

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