



SALES
SUPPORT
CONSULTING
ENGINEERING

Twin Eagle Consulting is a Colorado-based telecommunications consulting company formed in July of 2000. Our 30-plus years of experience in the field of telecommunications allow us to "Bridge the gap between IT and telecommunications."

We provide you with end-to-end telecommunications solutions that are reliable, scalable, and that bring you the most business value for your investment. We partner with you to guarantee your satisfaction.

Twin Eagle also has solid experience implementing industrial wireless data radios for bandwidth-intensive fixed and mobile applications. These applications include Public Safety, Traffic Control, Security, and SCADA. Such systems are mission-critical for municipalities, departments of transportation, public utilities, oil and gas companies, and many other organizations. We have consistently provided solutions that exceed the requirements of our customers.

At Twin Eagle, our goal is to bridge the gap by providing a broad knowledge of all types of telecommunications. Through our extensive experience in the operations, engineering, and maintenance of wide area networks (WAN), local area networks (LAN), microwave networks, wireless RF networks, and voice systems (PBX), we are able to provide the very best in consulting services.



Twin Eagle

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Twin Eagle Consulting, LLC



Bridging the Gap Between IT and Telecom



Description of New Service Offering:

- Radio Coverage Drive Test Kit
- Radio Coverage Data Analysis Services

Sales
Support
Consulting
Engineering



Radio Coverage Drive Test Kit

COLLECTING FIELD MEASUREMENTS FOR
RADIO SIGNAL STRENGTH AND BASE STATION ASSOCIATION

Twin Eagle Consulting has developed a tool kit for collecting radio signal measurements in the field, either in a "Proof of Concept" environment or using already-existing equipment within a production installation. This field measurement kit is ideal for collecting data during drive testing throughout a radio coverage area. The kit includes the hardware and software that are required to gather data from a variety of GE MDS radios, as well as for collecting vehicle position data using industry-standard GPS technology. The Coverage Kit software will automatically generate data files in several formats which can be displayed or used for final processing. Using the Coverage Kit, Twin Eagle Consulting is also available to conduct the entire coverage assessment process, from data collection through final processing and presentation of results.

TYPICAL FIELD MEASUREMENTS

- GPS: Clock time (UTC)
- GPS: Latitude values
- GPS: Longitude values
- GPS: Vehicle speed (mph)
- Radio: Received signal strength
- Radio: Signal-to-noise ratio
- Radio: Base Station association status
- Radio: Base Station IP address or unit number

flexible solutions for your industrial wireless needs

Radio Coverage Data Analysis Services

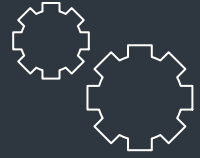
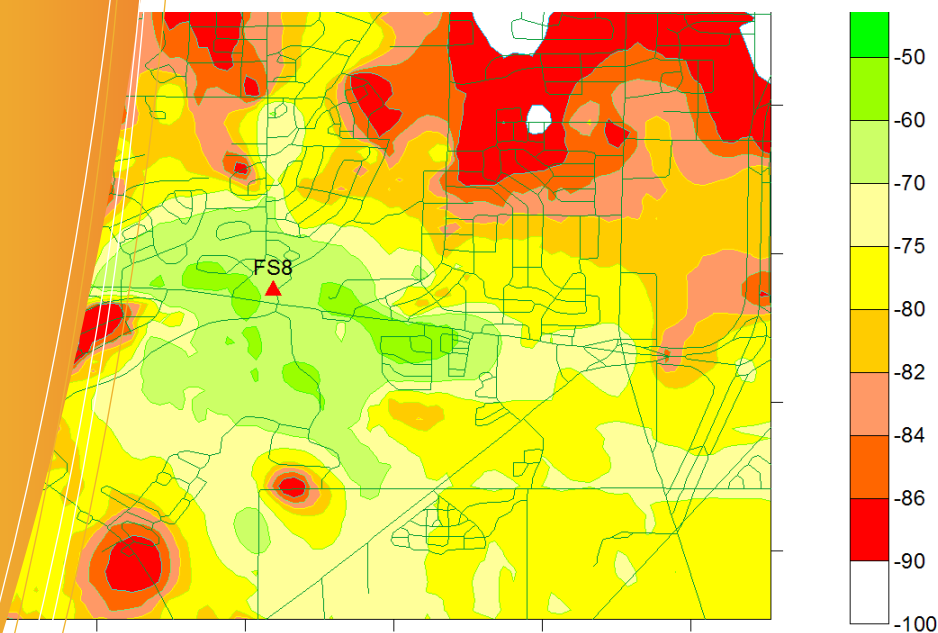
FIELD DATA PROCESSING, FINAL ANALYSIS, AND PRESENTATION

Twin Eagle Consulting offers a wide range of data processing services using the output of the Coverage Kit. Drive route data is provided in a form that is easily viewable using the popular *Google Earth* program. Data pre-processing, filtering, and adjustments can be done for all raw field measurements. Actual field data can be analyzed and plotted on maps of the coverage area in a variety of formats.

- ❖ Raw data files can be filtered and combined in a variety of ways to meet the input requirements of various data processing software packages.
- ❖ KMZ files are provided for display in *Google Earth*, and this format shows each data point along the drive route. Data points are color-coded using a simple set of "stop light" colors (green/yellow/red), with color thresholds that are configurable at the time of data collection.
- ❖ Collected field data can be plotted on maps of the radio coverage area, and these field coverage maps can be used to validate the results of coverage models and engineering studies.
- ❖ Presentation graphics can be generated in a variety of formats, which would be useful for meeting presentations (MS PowerPoint or PDF), electronic display, or hard-copy printed reports.

ENGINEERING SERVICES FOR INDUSTRIAL WIRELESS SOLUTIONS

Twin Eagle Consulting also provides expert engineering services for the interpretation of data results, as well as for the design and implementation of all types of industrial wireless networks. A few of our many services include: site surveys, path profiles, coverage models, proactive interference analysis, and end-to-end systems engineering that provides highly secure, mission critical communications.



FIELD DATA COLLECTION SERVICES

The Twin Eagle Coverage Kit can be used for collecting field data measurements in a variety of radio environments. Twin Eagle can also conduct the entire coverage assessment, from data collection through final processing and presentation of results.



DATA PROCESSING & ANALYSIS SERVICES

The engineers and support staff at Twin Eagle Consulting can filter and combine coverage data to meet specialized requirements. Field measurements can be plotted on maps of the coverage area in a variety of formats, for use in validating coverage models and predictions.



DATA PRESENTATION SERVICES

Presentation graphics can be generated in a variety of formats for use in meeting presentations, electronic display, or hard-copy printed documents. Twin Eagle documentation has a reputation for being of the most superior quality.