



Leaders in Industrial Automation  
Control Engineering and  
IIoT Enablement

# CASE STUDY

## CLIENT

Vericor Power Systems  
[www.vericor.com](http://www.vericor.com)

## PROBLEM

## SOLUTION

### Gas Turbine Engine Monitoring

*Utilizing cellular edge technologies to monitor mission-critical remote mobile assets.*



Vericor, a US manufacturer of aero derivative marine and industrial gas turbines based in Alpharetta, Georgia, United States required the ability to remotely monitor mobile remote assets to support new products and customer demands.

Formerly, Vericor's gas turbine engines had been stationary assets, with local control and user interface for monitoring these large turbine engines. This new market required constant monitoring of the equipment to support internal understanding of the performance of these engines as well as support and service for warranty claims. Additionally, the proper solution required the ability for rapid scalability to support the anticipated quantities for market expansion.

Engineer and design a remote software and hardware solution that could handle monitoring 150 data points at varying customer specified intervals between 1 and 6 seconds depending on the engine state and globally report in near real-time. In the case where internet connectivity was not available, data needed to be recorded locally and continuous at 1 second intervals in binary format. These could then be later retrieved for analysis.

Quality assurance and process documents were needed to develop and support a repeatable model that could, with a very high degree of dependability, produce a product to support the needed market demand and current customer orders.

## SCOPE

Develop custom software to run on the specified remote cellular hardware that is responsible for capturing and transporting data points to the cloud for alerting, data storage and viewing.

The data points are captured by one of two ways: reading a PLC data table by use of the EIP (Ethernet IP) protocol or reading a PLC data table by use of the Modbus TCP protocol. Both of these protocol drivers were engineered and developed by LEC and adapted to run on the needed embedded edge cellular gateway.

## LEC DELIVERABLE/ OUTCOME

The first production unit was successfully deployed via LEC's private secure cellular network to China, September 2018. Vericor is now able to view, in near real-time, 150 data points that provide insight into exactly how the field engine is performing from anywhere in the world.

This data provides a significant competitive advantage to Vericor and allows for internal evaluation and the refining of engine design based on the historical data of how the engines are used in the actual field applications.



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