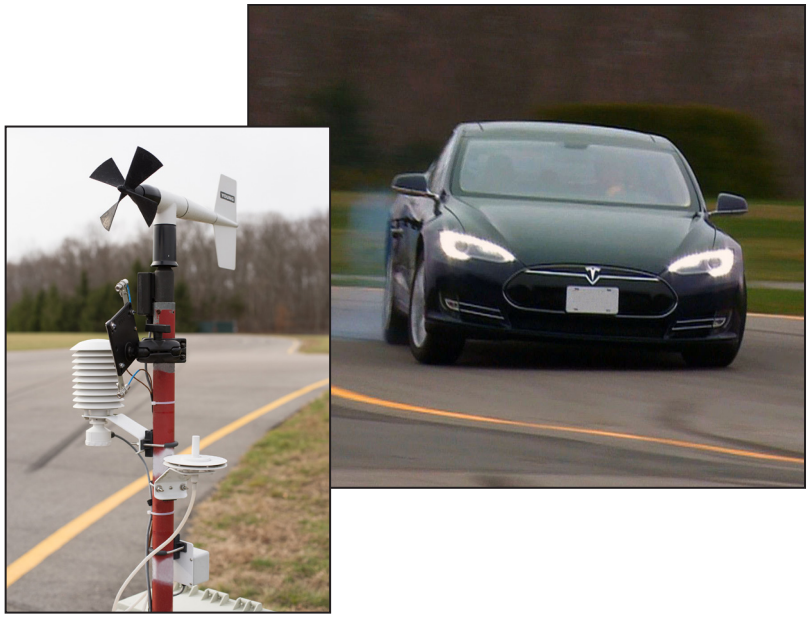
Auto Test Track Weather Station

The Challenge

A leading consumer magazine publisher that performs automobile experiments on a test track needed to sample and record local meteorological data. The engineers wanted to have the capability to retrieve current as well as historical track weather conditions from multiple locations.



The Solution

PVI Systems developed a weather station using highly reliable sensors that measure wind speed, wind direction, ambient air temperature, relative humidity, track surface temperature, and barometric pressure.

The system employs a combination of National Instruments data acquisition hardware and a Windows-based host computer. The host computer provides a local interface to both current and historical data, archived at a rate of one set of readings every hour.

The host PC and display are located on site in the test facility. The weather station is essential for providing accurate meteorological data, which is then fed back into test results to compensate for weather conditions.

Air Temp.	RH
81.0 °F	65.0 %
Track Temp.	**Pressure**
83.0 °F	30.80 in
Wind Spd.	**Wind Dir.**
5.8 mph	SSE

The weather station was deployed trackside in 2005. The system remains running, surviving numerous storms and hurricanes.

System Features

- PC host for operator interface and real-time weather data display
- Industrial grade weather sensors, including wind speed, wind direction, humidity, air temperature, and roadbed temperature
- Desktop client software for remote monitoring or current archived weather data
- Sensor signal conditioning enclosure for signal conditioning and transmission to the computer
- Developed using LabVIEW and National Instruments hardware solutions

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