

Vaisala Triton® Sonic Wind Profiler / The Wind Industry's Leading Remote Sensing System

SECONDWIND
by Vaisala



"I think there is a great future for remote sensing. The combination of well validated SODAR devices and traditional anemometry is a very good one and GL Garrad Hassan is already using remote sensing data in combination with conventional methods and data."

*Andrew Garrad
President, GL Garrad Hassan*

Reducing Uncertainty In Site Selection

Wind farm developers and their investors rely on wind measurement data to select viable sites for wind farms, and to select locations for wind turbines. Data on wind resources at and above hub height improves site assessments and reduces project uncertainties.

A Resource Assessment System For Today's Wind Turbines

Vaisala's Triton Sonic Wind Profiler is an advanced SoDAR that provides wind data well above the rotor tip-height of today's large wind turbines. Triton also captures extensive data on anomalous wind events such as speed and direction shear and turbulence that directly affect wind turbines' power output — and that could affect a wind farm's performance.

Low Power Consumption

Triton requires only 7 Watts of power for continuous operation, far less than other remote sensing systems. Technology innovations like low-power amplifier chips and the Blackfin ARM — one of the lowest-power CPUs on the market — enable Triton to be powered by two solar panels and to run continuously without being attended.

High Height Data

Triton's ability to capture wind data at heights up to 200 meters reduces uncertainty inherent in the use of extrapolated data from meteorological towers. At 120 meters, high quality filtered data captured by Triton normally exceeds 90% (averaged over a 12-month period). Triton's performance has been validated by studies correlating its measurements with anemometers at a number of sites.

Benefits of Triton

- High height data — to 200m
- No permitting required
- Extremely low power consumption (7 Watts)
- Data access and monitoring via Vaisala SkyServe® web portal
- Ease of deployment — installed and collecting data within 2 hours
- >95% operational uptime based on more than 500 commercial systems deployed worldwide since April 2008

Monitoring and Near-Real-Time Data Access Via Vaisala SkyServe®

Download and analyze your wind data at any time, from any location via the Internet. The Vaisala SkyServe wind data service delivers ten-minute averages over a secure web server, and graphical display tools make the data easy to read and understand.

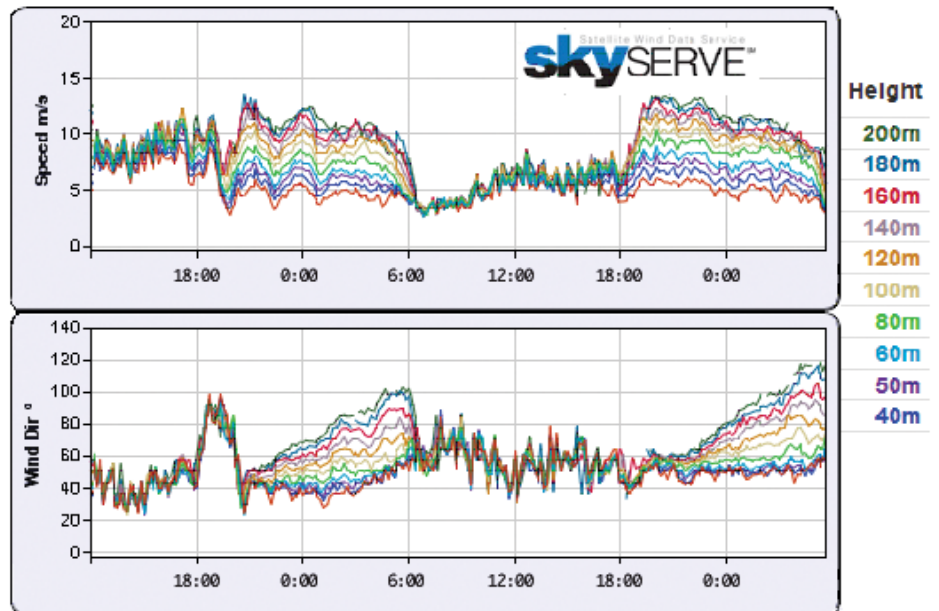
Our support team monitors the Triton fleet daily via SkyServe.

Easy to Deploy and Relocate

In a fast-paced industry, speed provides a competitive advantage. The low-profile Triton can be deployed and transmitting data within a few hours. By contrast, meteorological towers require a two-to-six-month permitting process and days to erect. With no moving parts, solid-state electronics, and a tough, lightweight low-density polyethylene (LDPE) enclosure, Triton is well equipped for redeployments in the toughest environments, in all climates.

The Most Cost-Effective Wind Measurement System Available

Triton's autonomous operation, ease of deployment, and fixed annual cost of maintenance make it the logical choice for remote sensing.



The Wind Industry's Leading Remote Sensing System

There are more than 500 Tritons in operation with leading wind project developers and operators, utilities, and wind resource assessment service providers in diverse locations spread over six continents (North America, South America, Europe, Africa, Asia, and Australia).

Triton is changing the way the wind industry measures the wind. To learn how you can obtain valuable insight into your project's financial performance, contact Vaisala today.

Use Tritons For Every Stage of Your Wind Project:

- Greenfield prospecting
- Micrositing and turbine suitability
- Wind shear validation
- Hub height wind speed validation
- Ramp event forecasting
- Power curve testing and nacelle anemometer correlation

Independent Validation

Studies released in 2010 by Energy Research Centre of the Netherlands (ECN) and National Renewable Energy Laboratory (NREL) showed excellent correlation between Triton and tower measurements.

Please contact us for more information.

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Through the combined expertise of Vaisala, a global leader in atmospheric observation, and Second Wind, a global leader in remote sensing technology and data services for the wind energy industry, we offer an integrated suite of wind measurement solutions.

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Please contact us at
www.vaisala.com/secondwind



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