

Wind power solutions

Qualisys has developed tools and expertise to accurately measure movements in a wide range of engineering applications.

Within wind power, we have focused on two main areas: The tracking of gearbox movement in the wind turbine nacelle; and the performance of the blades under pressure. Qualisys camera systems bring 3D visualization and unparalleled accuracy to the development of these technologies – helping optimize the amount of wind harvested by each turbine.

3D TRACKING OF GEARBOX MOVEMENTS

There are many different variables during operation that can lead to bearing failures. Wind pressure, vibration and other external factors can all contribute to movement in the gearbox, leading to damage or loss of power.

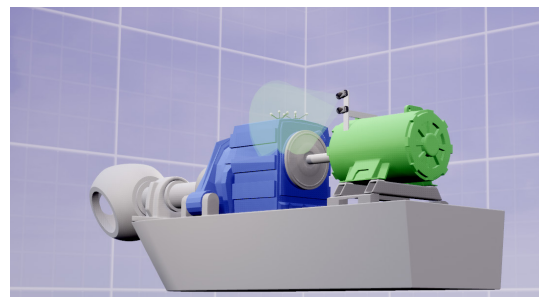
Qualisys systems can easily and cost-effectively be applied to practical deployment in wind turbines. They provide real-time 3D monitoring of gearbox performance helping operators determine risk factors and make instant decisions.

FEATURES

- Perfect fit for both inland and off-shore turbines.
- Easy and cost-effective solution
- Determine risk factors and make instant decisions
- 3D visualizations and real-time data
- Easy "daisychain" set-up
- Millimeter accuracy at + 100m
- Work in harsh conditions

Qualisys motion capture systems work by placing cameras on the generator and pointing them at a cluster of markers on the gearbox to provide real-time data of gearbox movements in all directions.

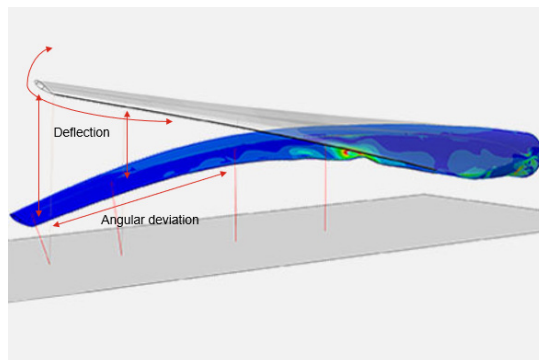
The images captured by a Qualisys system can help maintain optimized performance and reduce operational downtime.



BLADE DEFLECTION

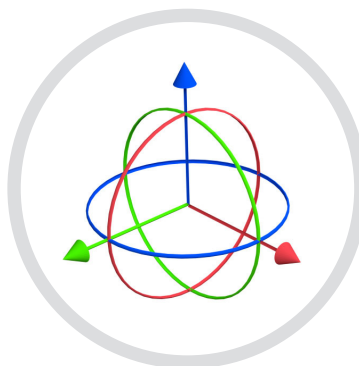
The sheer size of the blades causes huge amounts of pressure, with significant movement and bending in all directions as they have to stand harsh external conditions and support their own weight.

Rigorous testing is therefore required to determine the resilience of the blades and ascertain how much pressure can they safely absorb. Qualisys motion capture systems are used to track the deflection in all directions.



Weatherproof mocap

Get superior results even in the most challenging environments. We provide models with extra features resulting in excellent tracking when other hardware fail.



6DOF rigid bodies

QTM allows you to define and edit rigid bodies easily. Once defined, the rigid bodies are automatically identified in real-time using AIM.