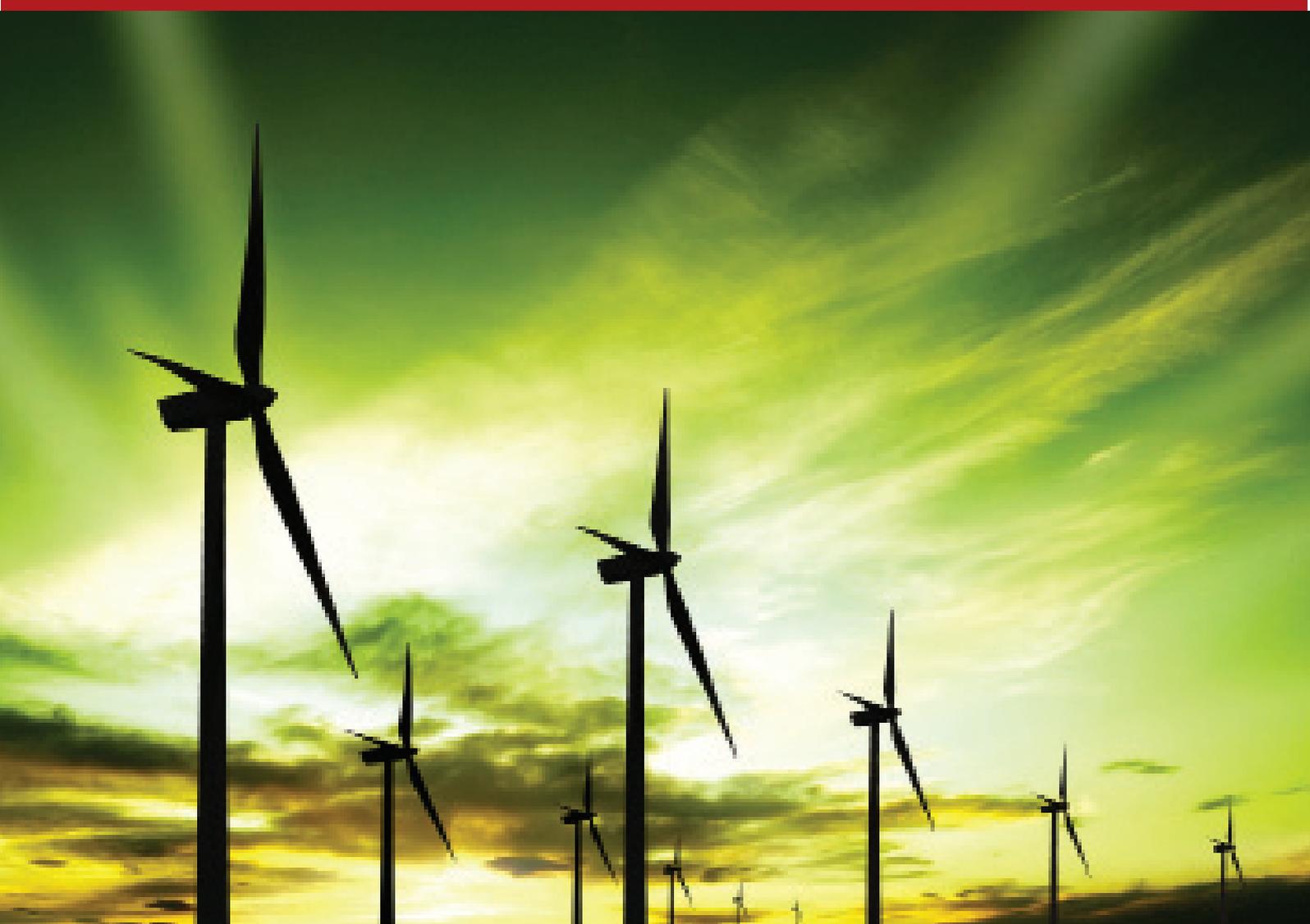


Wind Turbine Development



A UK-based wind turbine manufacturer needs to perform structural health monitoring of their products. Specifically, they wanted to carry out blade fatigue testing with static and cyclic loading of the blades.

In the pre-production stage a basic force is applied to the blade that will achieve the desired strain level profile in the blade.

This type of fatigue testing is used to validate new designs and models of blade. This durability data is used to confirm load profiles and track potential failures, cracks and changes in blade properties over time.

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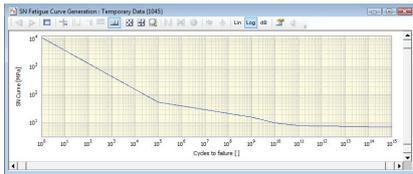
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A Prosig P8048 system with Lemo inputs was chosen to collect data from strain gauges attached along the length of the blades. Data from these sensors is then easily analysed using Prosig DATS Fatigue & Durability software package.

This type of fatigue testing is used to validate new designs and models of the blades. This durability data is used to confirm load profiles and track potential failures, cracks and changes in blade properties over time.



Often additional testing is carried out at certain frequencies. This is usually at the structure's

resonate frequency, but often above and below in order to validate the design.

With validated designs and simulations it is possible to certify that the components are fit for use.

Structural health monitoring continues after installation. It is possible to use a collection of sensor types to detect and potentially predict fatigue cracks in the structure. In this way it is possible to define 'healthy' and 'damaged' blade before failure.

System consists of

P8048

24-bit data acquisition system

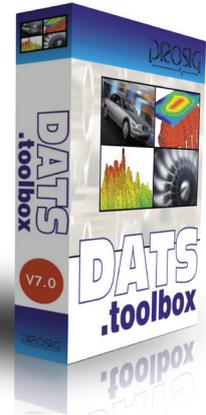


- 1 x P8048 Chassis
- 12 x 8408 8ch IEPE, Direct, Bridge

DATS

Analysis software

- 1 x DATS Toolbox software
- 1 x DATS Fatigue & Durability software



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