

DONG ENERGY WIND POWER AND THE BENEFITS OF A TCM® TEST ENTERPRISE SERVER



REAL WORLD SCENARIO THAT PAYS OFF

 GRAM & JUHL

DONG ENERGY WIND POWER AND THE BENEFITS OF IMPLEMENTING A TCM® TEST ENTERPRISE SERVER

The following case story is an actual example demonstrating the success of a TCM® [Turbine Condition Monitoring] Test Enterprise Server.

The Company

DONG Energy is one of the leading energy groups in Northern Europe.

DONG Energy wind power (DEWP) owns and operate a large fleet of offshore wind turbines (WTG's). In fact, DEWP is responsible for more than one quarter of the total offshore wind capacity worldwide. The company has multiple TCM® Site Servers to monitor and collect data from the WTG's. The TCM® Site Servers are all connected to a TCM® Enterprise Server, enabling

the company to monitor and consolidate data from multiple TCM® Site Servers. It integrates the information and provides a clear overview, as well as, data assurance, security and control.

During the warranty period, DEWP Diagnostics & Fleet Monitoring department monitors the turbines in passive mode. At the end of the warranty period, the company takes over the full monitoring responsibility from the OEM and the monitoring will change into an active mode.

The reason behind the decision

More and more of DEWP's wind turbine parks are now coming out

of warranty, and vibration condition monitoring has become a business-critical activity for the company's operations. Per internal DONG Energy guidelines, infrastructure classified as business-critical must be supplemented by test systems, for de-risking of e.g. software upgrades.

In order to meet the high standards and internal guidelines, DEWP decided to install a TCM® Test Enterprise Server in parallel with the company's production TCM® Enterprise Server.



The TCM® Test Enterprise Server..

A TCM® Test Enterprise Server is a replica of a company's current TCM® Enterprise Server allowing the company to test and develop systems and software in a risk-free environment identical to the normal TCM® Enterprise environment.

The process...

The TCM® Test Enterprise Server was developed in close cooperation with DEWP. The process therefore involved engagement from Gram & Juhl's technical support team as well as the monitoring team and IT department at DEWP. Gram & Juhl's technical support team assisted with data migration and configurations, making the process as smooth as possible for DEWP.

The TCM® Test Enterprise Server has been configured with a small subset of parks, each representing the different wind turbine types present in the DEWP fleet.

All software upgrades and major configuration changes must therefore now pass an acceptance test on the TCM® Test Enterprise Server before being deployed on the production TCM® Enterprise Server, providing a quality check.

DEWP's benefits of TCM® Test Enterprise Server

The TCM® Test Enterprise Server operates in a passive mode and cannot affect the production servers/site servers. It therefore provides an efficient and risk-free environment for system development, test and training,

The TCM® Test Enterprise Server allowed DEWP to test software updates and other business applications supporting the decision making process.

It also gave the company the possibility to train new users in the TCM® Enterprise Server without the risk of affecting the production system.

Apart from providing peace of mind during test and roll-out of

regular TCM® Enterprise Server software upgrades, the TCM® Test Enterprise Server provides a risk-free development environment for DEWP's integration of Enterprise Server with other business applications (e.g. ERP system and document management system) via the TCM® RESTful interfaces.

TCM® RESTful is a secure interface that is encrypted when using the https protocol on a TCM® server, to utilize third-party applications in conjunction with the TCM® Enterprise server allowing for a fully integrated setup. The TCM® RESTful interface can also be used to remote operation of the TCM® Enterprise Server.

"A TCM® Test Enterprise Server provides an efficient and risk-free environment for system development, test and training" -Jacob Juhl Christensen, Senior Condition Monitoring Analyst, Diagnostics & Fleet Monitoring, Wind Power, Dong Energy.

"A TCM® Test Enterprise Server is an essential part of robust IT-infrastructure supporting uninterrupted vibration condition monitoring of our assets"

-Jacob Juhl Christensen, Senior Condition Monitoring Analyst, Diagnostics & Fleet Monitoring, Wind Power, Dong Energy.



MAKE DEWP'S SUCCESS STORY YOUR OWN!

Find out how you can create your own TCM® Test Enterprise Server.

The TCM® Enterprise Server is responsible for managing, consolidating and backing up data from across all TCM® Sites Servers simultaneously. With an Enterprise Server, you can browse your condition data whenever you want and conduct instant data mining and cross compare wind farms. This insures data security and efficient and immediate handling of alarms for your wind turbines.

Setting up a right test environment ensures software-testing success...

A testing environment is a setup of software and hardware for the testing teams to execute test cases and deploy new software. In other words, it supports test execution with hardware, software and network. The TCM® Test Enterprise is an environment parallel to the existing TCM® Enterprise Server. Where the enterprise

collects data from all site servers, the TCM® Test Enterprise collects data from a number of designated sites selected. Implementing a test environment of the enterprise server enables real life testing of software updates in a risk free environment, making it possible to test the software updates on a selection of sites before rolling out the software.

The TCM® Test Enterprise Server gives you the safety you need....

Features

- Customized to replicate a specific TCM® Enterprise Server
- Select which sites to be included in the TCM® Test Enterprise environment
- Risk-free environment for system development
- Real life testing of software and business applications
- Available for TCM® Enterprise customers

For more information about how to create a TCM® Test Enterprise Server, please contact Gram & Juhl.

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