

Making Wind Turbines Speed Up

Most modern wind turbines could perform a significant increase in production of revenue generating power. The reason is incorrect configuration of the turbine — one of the major challenges faced by wind turbine manufacturers around the world. Now, Configit Software introduces a fully functional state of the art solution, which ensures correct configuration of the turbines, but also delivers significant lower cost of installation and maintenance, saves development cost and reduces time-to-market.

Background

Usually, configuration of wind turbines electronics takes a highly skilled operator days of concentrated effort, as several thousands of parameters is to be adjusted according to type of turbine, height, electric system etc.

In fact, the operator typically has to choose amongst more than 100 billion different combinations with the help of a printed manual or a spreadsheet on a notebook.

In addition, the operators working conditions are often extremely difficult — heavy wind conditions and extreme temperatures are not unusual

Even for an experienced operator errors often occur under these conditions. However, if the configuration is not 100 percent correct, the wind turbine — and its owner — will suffer in many ways. Decreased power production, increased payback time, and reduced expected lifetime of the turbine, just to mention a few.

This is a huge challenge for manufacturers of wind turbines around the world.

Maintenance of the turbines represents a similar challenge and is often a high cost effort for the owner as improper configuration increases the need for maintenance.

In addition, lack of updated information on software versions etc. installed in each turbine controller is not uncommon and increases the possibilities of maintenance errors.

For manufacturers, difficulties with configuration are affecting business in many ways. First of all, huge focus on maintenance efforts ties funds and manpower, reduces development of new products, and increases time to market.

In addition, cooperation between sales department and production often suffer because of lack of coherent data.



Configit Software A/S is an enterprise software company headquartered in Copenhagen, Denmark. The company develops and markets standard software for creating configuration-based sales and production support solutions, and advanced setup and installation software for electronic devices.

Founded in 2000, the company is a spin-off of the IT University of Copenhagen, and the core technology in the software is based on more than 10 years of research in formal verification.

The company has a high proportion of well educated staff (more than 50% of the employees have a PhD or more than one academic education at master-level) and still has very close relations to academia.

Since its start in 2000, the company has developed from an R&D project, through the various stages of a start-up, to become a well established growth-company. The company is owned by the employees, CAT Innovation and ACR Capital, thus financially backed by the 135 million EUR Slottsbacken funds.

Through our revolutionary patented configurator technology, Virtual Tabulation, we endeavour to help our clients

- Drive revenues
- Drive efficiencies
- Drive customer satisfaction

Challenges

- Guiding the operator in setting up parameters
- Ensuring correct set-up of all parameters
- Reducing set-up and maintenance effort
- Formalizing the correct combinations of parameters
- Developing new product variants with greater flexibility
- Reducing time-to-market

Solution

Configit Software has recently performed a focused R&D effort within the wind turbine industry and is now ready to present a tailor made fully functional solution to meet the challenges faced by the industry.

Using Configit Software's patented configuration technology the set-up procedure of a wind turbine will be reduced from weeks to a matter of hours. In addition, we can assure that each turbine is configured 100 percent correct — always.

Using Configit Developer, the manufacturer creates a precise description of the inter-dependencies among the parameters used to set up the turbine.

The parameter description is a formal model of how the turbine can be configured and which parameters the operator must set up for the system to function correctly.

Configit's patented technology makes it possible to compile this description into a compact table of all valid parameter combinations, called a virtual table, and embed it in the controller of the turbine.

The operator can access the description via an intuitive, graphical interface on a laptop computer and by answering a few tens of questions, the configuration of the turbine is correct.

Of course, maintenance will be much easier to perform and will not be needed so often. Manufacturers can also gain competitive advantage by using the configuration tools in sales departments and production thus ensuring that no orders, which cannot be built, reaches production.

Key Benefits and Advantages

Wind turbine manufacturers will obtain these key benefits and advantages by using this new industry tailored solution by Configit Software:

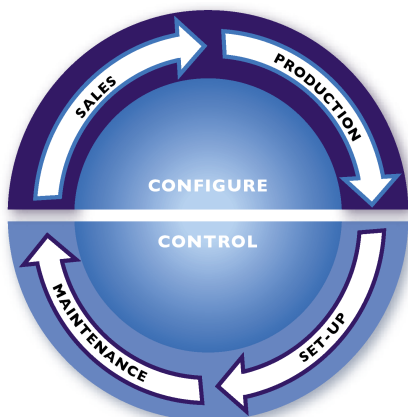
- Gain overall competitive edge by ensuring coherent effort and use of data in sales, production, installation and maintenance
- Increased power production and expected lifetime of turbine
- Lower cost of installation and configuration — from weeks to hours
- Lower cost of production
- Lower cost of maintenance and education
- Lower development cost
- Faster time-to-market

Configit Software Products:

- **Configit Developer** is a graphical modeling tool enabling product specialists to construct models of products and compile them into compact configurator modules called virtual tables.
- **Configit Control Manager** is an application programming interface for run-time software enabling fast lookup in a virtual table.



See **Configit Software Product Overview** for a more thorough description of Configit's software suite.



Configit Software provides a unified framework for configuring complex products in all phases of the life cycle — from sales and production to set-up and maintenance.



Configit Software A/S
Vermundsgade 38 B
DK-2100 Copenhagen Ø
Tel.: +45 7022 6700
Fax: +45 7022 6711
www.configit-software.com

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