



## **SAMTECH to extend its FEA software offer to Wind Energy sector with SAMCEF for Wind Turbines**

*Liege, Belgium, October 2004. SAMTECH, the European technology leader for the development of Integrated CAE Solutions, announces the launch of SAMCEF for Wind Turbines, its new Professional Solution for the design, the FE analysis and the optimization of wind turbines, including their transmission systems.*

With **SAMCEF for Wind Turbines**, SAMTECH is extending its suite of CAE professional solutions to Wind Power industry applications. **SAMCEF for Wind Turbines** is a vertical application addressing the numerical simulation of complex Wind Turbine systems. The first release will be demonstrated at DEWEK 2004 in Wilhelmshaven (20-21 of October 2004).

In the past, the mechanical design of Wind Turbines was mainly based on simple Multi-Body Simulation possibly including control loops and on separate local structural analysis using the Finite Element Method. **SAMCEF for Wind Turbines** offers now an innovative solution based on the integration into a unified modeling environment of complementary disciplines like non-linear FEM technologies for composite blades and structures, state-of-the-art gearbox modeling capabilities, generator models, servomechanisms and turbine controllers.

**SAMCEF for Wind Turbines** enables users to easily and quickly create a complete model of the wind turbine within the unique **SAMCEF Field** environment, based on CAD geometries that can be imported from well-known commercial CAD systems. Direct import of existing FE models from external FEA codes (e.g. Nastran, Ansys...) is also possible.

**SAMCEF for Wind Turbines** provides engineers with a very easy access to detailed linear or non-linear analyses of all relevant Wind Turbine components (e.g. gearboxes, blades, generators...). It includes advanced modeling capabilities for most usual gearbox designs (e.g. planetary stages, helical parallel stages...). Several models for synchronous and asynchronous generators are available, that can be controlled either directly in SAMCEF or alternatively through digital control boxes imported from external functional simulation tools like MATLAB Simulink.

**SAMCEF for Wind Turbines** analyses results can be blades deformed geometry, mode shapes, kinematical modes, strains, stresses in any structural component but also time evolution of gear or bearing forces, shaft torques... Moreover, **SAMCEF for Wind Turbines** is also designed to be used in combination with the optimization platform **BOSS quattro** to produce the optimal design of the global Wind Turbine system or of specific components.

*"The Wind Turbine sector is more and more demanding for a precise, complete and integrated CAD based simulation environment coupling mechanisms, structures and control/command aspects, because the physical dynamic behavior of Wind Turbines cannot be described properly with too simple approaches" explains Andreas Heege, Manager of SAMTECH Iberica. "SAMCEF for Wind Turbines is the first solution able to predict precisely the transient dynamic response of the Wind Turbine in even most unsteady operation conditions, while giving access under the same environment to classical design methods like rigid/flexible multi-body simulation and linear/non-linear FE analysis".*



## About SAMTECH

**SAMTECH s.a.** is the European leading provider of Computer Aided Engineering (CAE) software for Finite Element Analysis (FEA) integrated with Multi-Body Simulation (MBS) and Multi-Disciplinary Optimization (MDO). Founded in 1986 from the Aerospace Laboratory of University of Liege, SAMTECH is the main company of the SAMTECH Group, developing and marketing the general-purpose Finite Element Analysis code **SAMCEF** and the Multi-Disciplinary Optimization platform **BOSS quattro**. SAMTECH provides integrated general-purpose software products for linear FEA (**SAMCEF Linear**), non-linear FEA/MBS problems (**SAMCEF Mecano & Thermal**). SAMTECH provides industries also with specific Professional Solutions addressing specific applications to be solved in the industrial environment and based on the various disciplines that are useful in this sector. These core products answer to a wide range of industrial needs from the preliminary phases of design to the most advanced verification analyses. The software technology of SAMTECH has an unsurpassed reputation for its quality and reliability. It has been adopted by many major companies across all engineering disciplines as an integral part of their design process.

Visit <http://ww.samcef.com> for further details about SAMTECH Product offer.

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