

IBM collabore sur les nouvelles technologies de l'énergie éolienne

Paris - 07 oct. 2010: IBM annonce aujourd'hui que le fournisseur d'infrastructures de production et de transmission d'électricité Alstom et l'entreprise de recherche et développement sur les technologies de l'énergie, Ikerlan-IK4, utilisent les logiciels IBM afin de développer des systèmes de contrôle d'éoliennes qui améliorent considérablement les performances des systèmes d'énergie durable basés sur l'énergie éolienne.

Les nouvelles éoliennes exploitent un système sophistiqué de capteurs électroniques et de logiciels IBM qui optimisent la performance à l'aide d'informations sur la direction et la vitesse du vent, la température et d'autres éléments. Un système de contrôle central recueille et analyse les données de chaque turbine afin de contrôler à distance leurs sous-systèmes individuels, effectuer des diagnostics et gérer la production d'électricité du parc éolien. Alstom et Ikerlan-IK4 utilisent un logiciel IBM pour aider à développer et à automatiser les "systèmes de systèmes" qui contrôlent les turbines et leurs systèmes de communication interconnectés.

IBM Collaborates on New Wind Energy Technologies

ARMONK, NY and MADRID, SPAIN – October 6, 2010 -- IBM today announced that energy system supplier Alstom, and Ikerlan-IK4, an energy technology research and development organization, are using IBM software to develop wind turbine control systems that significantly improve the performance of sustainable power systems based on wind-generated energy.

The new wind turbines leverage a sophisticated system of electronic sensors and software from IBM that optimize performance based on input regarding wind direction and speed, temperature and other factors. A central control system collects and analyzes data from each turbine to remotely control individual turbine subsystems, perform diagnostics and manage wind farm power generation. Alstom and Ikerlan-IK4 are using IBM software to help develop and automate the "systems of systems" that controls the turbines and their interconnected communications systems.

"Leveraging IBM software helps us apply an automated process to the design and development of Alstom Wind control systems," said Alfonso Faubel, Vice President Alstom Wind. "This advantage definitely allows us to deliver tailored solutions that are fully adapted to new emerging standards, markets and client needs." Alstom and Ikerlan-IK4 are also using the Gears Software Product Line Lifecycle Framework™, from IBM business Partner, BigLever Software™, to customize their designs to accommodate the varying climates and geographies where the wind turbines will operate. Alstom and Ikerlan-IK4 estimate that their use of IBM and Big Lever Software reduces development costs by as much as 25 percent and decreases development time by a factor of 10 for each product variation.

"The fact that the wind turbines can be customized to accommodate geographic differences and also adjust to ambient environmental changes adds a layer of complexity to an already a complex software development process," said Dr. Salvador Trujillo, chief product line engineer at Ikerlan-IK4. "By using IBM Rational Software for model-driven development combined with BigLever Gears for product line engineering, we can reuse software assets and manage these variations at a pace that allows us to keep up with market requirements."

Growing Demand for Wind-Generated Power

Harnessing the power of wind is growing in popularity as a sustainable energy choice and is expected to make

up as much as 12 percent of the global power supply by 2020.¹ For example, Denmark supplies more than 20 percent of its total electricity consumption with wind power, by far the largest share of any country in the world.² and on particularly windy days wind has generated over 40 percent of the electrical power produced in Spain.³ According to a 2008 report by the US Department of Energy, obtaining 20 percent of America's electricity from wind by 2030 wind would reduce cumulative CO₂ emissions by up to 25 percent, or 7.6 billion tons.⁴

According to the European Wind Energy Association⁵, more new wind power capacity was installed in the EU in 2009 than any other electricity-generating technology. American Wind Energy Association⁶ reports similar trends stating that the U.S. wind industry broke all previous records by installing close to 10,000 megawatts of new generating capacity in 2009, making the year the strongest yet.

About Ikerlan-IK4

Ikerlan-IK4 is a private organization that collaborates with customers in research and development projects that lead to new or renewed products or processes. The company is particularly active with industrial customers in a variety of sectors such as energy, railway systems, elevator systems, home appliances and equipment goods, among others. Major areas of research focus on embedded systems, where safety-critical and advanced engineering paradigms are the leading methodological foundation. Ikerlan-IK4 has more than 35 years of experience in combining and applying these technologies, and is part of the IK4 research alliance with around 1,300 researchers overall.

About Alstom

Alstom is a global leader in the world of power generation and rail infrastructure and sets the benchmark for innovative and environmentally friendly technologies. For wind activity, Alstom designs, assembles and installs a wide range of onshore wind turbines spanning 1.67 MW to 3MW. The company has taken a significant part of the development of the Spanish wind energy market, which is ranked second in Europe. Alstom currently generates about 50% of its sales (Wind activity) from other European countries. To date, it has installed over 1850 wind turbines in over 100 wind farms, corresponding to a total capacity of over 2200 MW (about 2% of the worldwide installed base). Alstom brings international expertise and extensive knowledge of local markets as a fully integrated provider of clean, efficient and technologically advanced power system solutions in all key energy markets. The Group employs around 80 000 people in 70 countries, and had orders of €24, 6 billion in 2008/09.

For more information, contact: <http://www-01.ibm.com/software/rational/announce/smartproducts/>

1 World Wind Energy Report/World Wind Energy Association

http://www.wwindea.org/home/images/stories/worldwindenergyreport2008_s.pdf

2 Pure Power, Wind energy targets for 2020 and 2030, European Wind Energy Association – 2009

http://www.ewea.org/fileadmin/ewea_documents/documents/publications/reports/Pure_Power_Full_Report.pdf

3 Canadian Energy Renewal Alliance Fact Sheet <http://www.canrea.ca/site/wp-content/uploads/2009/03/canrea-six-ways-of-providing-base-load-power-from-wind-feb09.pdf>

4 American Wind Energy Association Fact Sheet http://www.awea.org/pubs/factsheets/Backup_Power.pdf

5 European Wind Energy Association [http://ewea.org/index.php?id=60&tx_ttnews\[tt_news\]=1792](http://ewea.org/index.php?id=60&tx_ttnews[tt_news]=1792)

