

Grid applications: a new way to do business

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(PhysOrg.com) -- Grid technology developed by European researchers offers a new way to do business, with partners working simply, seamlessly and 'virtually' around a common goal. It is already having a big impact, in a variety of applications.

GlaxoSmithKline can now link up with product partners in days or weeks rather than months. Meteorologists will soon access libraries of weather data from across the globe through their browser in seconds. The aerospace and automotive industries can quickly deploy widespread teams to tackle complex problems.

These are the first impacts to spring from the SIMDAT project, a massive European research effort to bring grid technology to bear on the business world.

It could help improve car safety, reduce noise and vibrations in cars, usher in low-noise aircraft able to use short runways, promote faster and targeted drug discovery and development. It could enable better weather prediction and climate analysis.

This is just the beginning. SIMDAT has created a portfolio of tools for grid deployment in business environments, focusing initially on product development in four of the most demanding sectors in the world: pharmaceuticals, aerospace, automotive and meteorology.

Industrial strength

“The industries we chose were quite different,” recalls Professor Dr Ulrich Trottenberg, director of Fraunhofer SCAI, coordinating partner of SIMDAT. “It was a particular strength of SIMDAT to aim at several industrial sectors to try to find out what can be done independent of the sector and what has to be done within the sector.”

SIMDAT applied their technology to meteorology to develop a way for researchers to access data anywhere in the world, from any weather service, using 11 pilot national weather agencies to establish and validate the system.

In pharmaceuticals, SIMDAT applied its portfolio of technologies to drug discovery, using grids to link research partners with GlaxoSmithKline. Typically, it could take months to get a partnership up and running. With the SIMDAT system, it takes days or weeks. Consider the savings when GlaxoSmithKline is known to spend €300,000 an hour on drug discovery research.

Intellectual property

Intellectual property and security is one of the reasons it takes so long to set up partnerships in the pharmaceuticals sector, but the SIMDAT portfolio of tools carefully manages access to sensitive data, overcoming one of the major obstacles to rapid grid deployment.

Its ‘Pharma’ application is used for data-mining very large text and genome databases, looking at 3D structures for similarity and relations and context. “They are very intensive applications,” stresses Yvonne Havertz, Fraunhofer SCAI, SIMDAT project management.

In the aerospace application, SIMDAT tools allowed the integration of different research sites and partners. Each player could use their own tools and environment and still exchange data and services across the

grid.

The underlying technology is unimportant to the users. SIMDAT transparently delivers the functionality. This enormously reduces costs, because engineers do not need to buy new software and there is direct support for the integration process; the SIMDAT grid solution does most of the grunt work.

Automotive challenge

The system does initially require integration between the engineers' tools and the SIMDAT platform, but once that is accomplished, the platform handles all the management and execution of data and applications. It provides a way to integrate disparate systems quickly and securely.

The engineers and companies who tested the platform in the various application sectors are all very enthusiastic about the potential of the technology, "And they have also suggested areas that could be improved," explains Clemens-August Thole, Fraunhofer SCAI, SIMDAT project coordinator.

SIMDAT's impact went beyond the grid platform it developed. It also created new opportunities for existing products.

Taverna from IT Innovation and KDE from InforSense are two important applications in the pharmaceuticals sector. But these workflow tools also have an application in the automotive and aerospace industries. SIMDAT helped create markets for an existing product and a new solution for a current problem.

That is just one simple illustration of the range and impact of SIMDAT's work. The project worked on grid standards, and developed a wide range of commercial opportunities, some of which are already being realised.

This is part two of a three-part series on SIMDAT. Part three will appear on 17 December.

Part 1. Virtual organisations become a reality --

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