

# From days to hours

Advanced flight simulators such as the ones developed by HiQ are evident fields of application for Grid Computing states managing director Gilbert Jensen, HiQ

## Grid Computing can dramatically reduce the time spent solving large number crunching tasks in relation to scientific computing, including simulation

By Michael Fahlgren

Most enterprises use only a fraction of a computer's computing power, meaning that most of the time they only use electricity and emit heat for no use whatsoever. The same enterprises often need to make very complex calculations, for instance in connection with simulations, which is very expensive to have carried out.

That is the reason why HiQ at Lyngby, in cooperation with MESH-Technologies in Odense, offers new ways of connecting otherwise usual office computers in so-called Grids; networks in which the computers work together to solve complex tasks. This method is cost saving, while at the same time much money can be made.

### Specialists in communications and simulation

Managing director Gilbert Jensen co-founded the company WISE Network a little over 5 years ago. In January 2000 Swedish HiQ acquired the company and since then revenue, earnings and staff members have doubled making HiQ one of the fastest growing IT companies in Denmark. 40 staff members are employed working with advanced software development, simulation for testing and training as well as testing and verifications.

- HiQ's niche is voice and data communications as well as simulation, which are skills much in demand in the medical sector. As an example HiQ has managed a telephony project to coordinate AstraZeneca's local telephony

areas - mobile and fixed telephony. One of the key concepts within Grid Computing is communication, and that is one of our most important focus areas, says managing director Gilbert Jensen, HiQ.

### Expertise in the field of advanced software development and validation

At the international level HiQ works within medicine and biotechnology, the telecom sector, defence industry, finance and insurance.

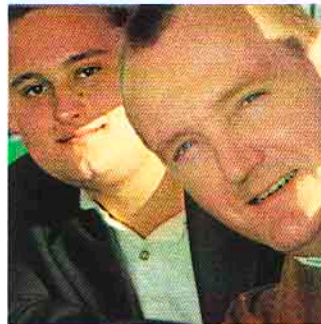
A good example is Affibody AB, a development company within the biotech industry that works with pharmaceutical development, proteomics, bioinformatics and bioseparation. HiQ has provided specialist expertise in the software development of GeneWeaver™, a tool for the analysis and mapping of genetic information. This system is linked to various measurement and analysis instruments to enable effective analyses of the enormous amount of measurement data required in genetic research today. Also Novo Nordisk Engineering utilizes HiQ's fields of expertise within software validation in compliance with FDA.

### Simulated solution to scientific problems

In fact, simulation and testing are both very important in solving scientific problems.

- Simulation in the biomedical engineering industry is a matter of combining biology, chemistry, physics and mathematics. It is called scientific computing, elaborates Lars Henriksen, systems

manager & consultant of MESH-Technologies. Scientific computing often requires a high performance computing platform, and our Grid solutions provide that platform. Grid Computing is by far the best solution in relation to large scientific calculations. The enterprise already possesses computing power - we only connect it, state Lars Henriksen.



- Grid Computing is the best solution for large scientific calculations and simulations. Enterprises possess lots of idle computing power which we build into inexpensive Grids, state Lars Henriksen, MESH-Technologies and Gilbert Jensen, HiQ

### Young company with long expertise

In April 2003 MESH-Technologies was founded on the long-standing basis of high performance super computing. The company has accumulated extensive expertise in Cluster Computing and Grid Technology, which are offered via consultancy services and through software development.

For the time being MESH-Technologies is developing a foundation for Grid Computing - that is the Middleware Layer which is to render possible the adaptation of applications for a Grid environment.

Already at this stage the company experiences considerable interest from enterprises requiring performance of large quantities of scientific calculations.

- We are among the first to supply a real foundation for Grid Computing, which enterprises can use directly to build Grids. Despite the fact that we have only existed for a short period in the shape of a company, our development is far advanced - thanks to our employees' long-standing expertise, Mr Henriksen says.

### Easy and safe to use

Security is of paramount importance to all enterprises working with research and development. Grid solutions means distributing subsets of data for faster calculation and many R&D departments are reluctant to distribute research data outside the enterprise for security reasons.

- But the solution from MESH-Technologies does in fact keep everything within an enterprise's own premises, thus giving the users total control of safety, Mr Jensen says.

### Patenting by means of simulation

In particular enterprises in the fields of medicine and biotechnology can benefit from making faster simulations. Using Grid Technology ensures huge calculations to be made in a matter of hours instead of days.

- These enterprises can document their research through simulations in order to patent a new drug, Mr Jensen concludes.