



Fujitsu provides scalable computing capacity for the European Commission IST Integrated project Pico-Inside

SynfiniWay-based ASP infrastructure ensures robust and reliable service delivery to widely dispersed consortium sites

Paris and Toulouse, 2 February, 2006 – Calculations for the *Pico-Inside* project have now started in earnest using the ASP (Application Service Provider) computing facility managed by Fujitsu Systems Europe. The Pico-Inside consortium (www.picoinside.org) from the Future and Emerging Technology (FET) part of the EC IST program has brought together 13 academic institutes and industrial organisations across Europe that are leaders in nano-science. Over the next 3 years this project will explore atomic-scale technology that could lead to mathematical calculations being performed within a single molecule.

Pico-Inside project co-ordinator is Prof Christian Joachim who leads the nano-science group (GNS) of the CEMES/CNRS¹ based in Toulouse, France. Prof Joachim was recently awarded the Feynman Prize for Theory by the Foresight Nanotech Institute for developing theoretical tools and principles to allow the design of a wide variety of single molecular functional nanomachines. This work included the establishment of the elastic scattering quantum chemistry (ESQC) theory to explain tunnelling junctions between metal electrodes and molecules, from which the GNS developed the first intramolecular circuit simulator (N-ESQC) for a large molecule connected to N atomic scale electrodes. Most of the large parallel simulations to be run during the project will use this N-ESQC code.

In addition to the scalable compute infrastructure, Fujitsu is also contributing its knowledge in processor design to the work-package on the architecture for mono-molecular electronics. This activity will draw upon expertise developed within Fujitsu laboratories during various nano-technology research projects.

An integral part of the ASP infrastructure is the Fujitsu SynfiniWay™ software framework that provides a service-oriented interface to the remote compute and data servers. SynfiniWay services completely virtualise a network of resources, from the desktop to remote servers and across any number of connections. Remote ASP compute servers are accessible from the users desktop with the same standard interface as for a local machine. Services can be linked using the in-built workflow tool to create extended resilient processes. SynfiniWay automatically handles all file transfers between the client and ASP sites, in both directions, and encrypts data across external network connections..

SynfiniWay is developed entirely in Java™ and runs on any compute platform – Windows®, Unix or Linux. A customisable Java client is provided, though the framework is equally accessible through a web browser interface or a standard API for embedding within proprietary front-ends. SynfiniWay provides an adaptable virtualisation framework that can be deployed entirely within the organization, or between collaborating businesses. Customers today are deploying SynfiniWay for resource pooling between sites to increase global machine utilization, standardisation on a common service-oriented application interface to heterogeneous systems, and meta-scheduling of service-based workflows for optimized process turnaround.

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¹ CNRS : Centre National de la Recherche Scientifique
CEMES : Centre d'Elaboration de Matériaux et d'Etudes Structurales

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Fujitsu Systems Europe is a strategic member of the Fujitsu Group, a leading provider of customer-focused IT and communications solutions for the global marketplace.

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