

# DS-Grid: Large Scale Distributed Simulation on the Grid

## e-Science Sister Project

DS-Grid is a collaborative project between the Midlands e-Science Centre (MeSC), the School of Computer Science and Information Technology, University of Nottingham, and the Parallel & Distributed Computing Centre (PDCC) at Nanyang Technological University, Singapore.

The project is one of four 'Sister Projects' funded by the e-Science programme for 2003 and aims to set up a trans-national, long distance Grid infrastructure, and develop a case study in Grid-aware large-scale distributed simulation.



### Birmingham

The Midlands e-Science Centre, is a new centre of excellence and has as its focus the Modelling and Analysis of Large Complex Systems.

### Nottingham

The Intelligent Agents Group at the School of Computer Science and Information Technology, University of Nottingham conducts research into the Specification, Design and Implementation of Agent-based Systems.



### Singapore

The Parallel and Distributed Computing Centre (PDCC) is a research centre within the School of Computer Engineering at Nanyang Technological University, Singapore. The PDCC is one of the world leaders in Grid-aware large-scale distributed simulation.

## Project Rationale and Summary

The last decade has witnessed an explosion of interest and innovation in the field of large-scale distributed simulation. This activity is mainly centred on High-Level Architecture (HLA), which has developed as an IEEE standard to facilitate interoperability and reuse of simulation models. Using HLA, a large-scale distributed simulation can be constructed by linking together a number of geographically distributed components (or 'federates') into an overall simulation (or 'federation').

The Grid provides an unrivaled technology for large-scale distributed simulation as it enables collaboration and the use of distributed computing resources, while also facilitating access to geographically distributed data sets.

The long-term aim of the DS-Grid project is a 'Grid plug-and-play distributed simulation system', a distributed collaborative simulation environment where researchers with different domain knowledge and expertise develop, modify, assemble and execute distributed simulation components over the Grid.

### Investigators

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