



dti

GLOBAL WATCH MISSION PROFILE

CERN Mission in Distributed Applications

JUNE 2004

The DTI drives our ambition of 'prosperity for all' by working to create the best environment for business success in the UK. We help people and companies become more productive by promoting enterprise, innovation and creativity.

We champion UK business at home and abroad. We invest heavily in world-class science and technology. We protect the rights of working people and consumers. And we stand up for fair and open markets in the UK, Europe and the world.

INTRODUCTION

The mission to CERN (The European Particle Physics Laboratory) on Distributed IT Applications is sponsored by the UK Department of Trade and Industry's Global Watch Service.

The mission will be visiting CERN between the 28th and 30th of June 2004. It will provide three days of detailed interaction between the mission participants and CERN staff.

CERN is one of the world's most prestigious research centres. It has always been at the forefront of computing and networking technology. The World Wide Web was invented at CERN in 1989, and the Laboratory has continued to invest much time and effort in developing the technologies that will allow it to run the largest scientific instrument on the planet (the Large Hadron Collider), gather and analyse the data from its experiments, allow its world-wide community of scientists to keep in touch, to share their data, and to use their distributed computing resources with maximum efficiency.

CERN MISSION IN DISTRIBUTED APPLICATIONS

MISSION FOCUS

The aim of this mission is to study techniques for developing distributed systems over homogeneous and heterogeneous computing resources and to look at specific examples of applications implemented using such computational clusters. Grid technology developed at CERN is already being used for particle physics and healthcare applications.

CERN is a unique resource and the UK could benefit from the technology advances that have only been possible as a result of CERN's scale and multinational membership. Mission participants will have the opportunity to gain an understanding of both the reasons for these technology developments at CERN and how they could be exploited within their own sectors in the UK. The UK is now regarded as ready to adopt GRID technologies and CERN is the foremost application developer in this field.

ABOUT DTI GLOBAL WATCH MISSIONS

Global Watch Missions are visits overseas by small groups of technical experts from UK companies and academia to top-performing technology organisations characterised by excellence in the relevant field. Planned and managed by a UK coordinating organisation, with guidance and financial support from the DTI's Global Watch Missions team, missions are mounted to inform and influence high-tech UK industries in four broad fields: electronics and Information & Communication Technology (ICT), life sciences, performance engineering and energy and the environment.

The findings are compiled into a report by the mission participants, which is made available. It is expected that the mission will facilitate a two-way exchange of information and will

enhance the potential for co-operation between UK and international organisations.

ABOUT Qi3 LIMITED

Qi3 is an organisation that specialises in the management of the intersection of markets and technologies, primarily in physical sciences, ICT and healthcare. The company has built a reputation for effective 'technology translation' between public and private sectors and spinout creation / licensing of a variety of technologies.

Qi3 enjoys strong existing links with the IT and Technology Transfer Departments at CERN and the UK IT and technology translation networks.

BENEFITS TO THE HOST ORGANISATION

Potential benefits for CERN include:

- Licensing opportunities for CERN technologies pertinent to the mission objectives
- Awareness of the OpenLab facility at CERN, with the aim of encouraging participation. CERN needs to partner with hardware, software and service providers in order to enable its Grid ambitions to be realised
- Overall increased awareness of CERN during the 50th anniversary year. This is particularly relevant to the IT industry, in that the world-wide web was invented at CERN

MISSION PARTICIPANTS

The mission to CERN on Distributed IT Applications consists of a group of companies and one academic who combined have a vast experience in Grids, distributed IT, and the ICT industry in general.

Nathan Hill**Qi3 – Industry Coordinator for
PPARC and UK Technology
Transfer Coordinator for CERN**

In 1999, Nathan started his own business, Qi3, which is a specialist technology commercialisation business, acting to support the sales and marketing activities of technology companies and start-ups. As part of this activity, Nathan works for PPARC as Industry Coordinator and UK Technology Transfer Coordinator for CERN, building partnerships between the PPARC-funded research groups and UK industry.

Nathan studied Physics at Oxford University (specialising in Condensed Matter) and then moved to Germany for 3 years, selling cryogenic and superconducting magnet systems for Oxford Instruments. He returned to Oxford Instruments in 1992 and as Marketing & Strategy Director headed up the marketing activity for research and novel industrial applications of cryogenics and superconductivity. He moved to Cambridge in 1996 as Managing Director of two companies, one specialising in superconducting thin film detectors and SQUIDs, the other a manufacturer of Scanning Tunnelling Microscopes. During this period he evaluated numerous companies for acquisition or disposal. Much of Nathan's work is in the development of 'physics to healthcare' opportunities and strategic alliances. Recently he was invited to speak at the International Patent Licensing Seminar in Tokyo. Nathan now supports a number of companies in startup or rapid growth modes.

Qi3 is acting as the coordinating body for this mission. Qi3 is particularly suited to lead this mission as it already has a contract supported by OST through PPARC as UK Technology Transfer Coordinator for CERN. This gives the team strong existing links with the IT and Technology Transfer Departments at CERN and the UK IT and technology translation networks.

Website: www.qi3.co.uk
Email: nathan.hill@qi3.co.uk

Ted Ridgway Watt
**DTI International Technology
Promoter**

Ted joined the International Technology Promoters (ITP) programme in 2001, to address the Information Technology, Electronics and Communications (ITEC) sector, with a focus on Europe. His experience of

technology transfer in the European region complements the programme's current coverage of the Asia-Pacific and North America regions.

Europe has established a globally competitive performance in the ITEC sector and Ted's role is to help innovative UK companies benefit from overseas technology developments by identifying partnership opportunities, facilitating access to overseas technology providers and assisting in technology transfer projects.

The UK already has extensive capability and a wide competence base in electronics and communications but the increasing performance demands of future generations of communications systems underline not only the need for timely acquisition of technology but also effective exploitation. Ted believes that the ITP programme's approach of forging technology partnerships and encouraging inward technology transfer projects is a valuable way to establish overseas links that will help the UK and its partners.

Ted came to the ITP programme from the Defence Diversification Agency, where he was the Technology Diversification Manager for the South East of England, responsible for technology transfer projects between public research institutes and small- and medium-sized enterprises. Prior to that he was based at the DERA office in Brussels, responsible for developing collaborative research and technology transfer projects with European partners.

Website: www.globalwatchonline.com
Email: ted.ridgway-watt@pera.com

Peter Rice
**European
Bioinformatics
Institute**

The European Bioinformatics Institute (EBI) is a non-profit academic organisation that forms part of the European Molecular Biology Laboratory (EMBL). The EBI is a centre for research and services in bioinformatics. The Institute manages databases of biological data including nucleic acid, protein sequences and macromolecular structures.

The mission of the EBI is to ensure that the growing body of information from molecular biology and genome research is placed in the public domain and is accessible freely to all facets of the scientific community in ways that promote scientific progress.

Peter is an academic group leader at the European

Bioinformatics Institute, developing Grid and web services to integrate bioinformatics applications, databases and workflows, and to make them available as services to the research community. Peter is also the originator of the EMBOSS open source bioinformatics project.

Platform technologies include Grid technology, Web services, Workflows, Application integration, Biological data integration, Open source software, and Bioinformatics.

Website: www.ebi.ac.uk

Email: pmr@ebi.ac.uk

Derek Greer
VEGA Group Plc



VEGA is an established consulting and technology company that implements strategy for international businesses and government organisations. It works across the public and private sectors, with clients in government, defence, space and commercial markets and delivers services worldwide with offices in the UK, Germany and France.

Derek is the Head of Engineering Services with VEGA. He is responsible for management of VEGA's engineering and software support activities with clients in the aerospace and related high technology markets. Derek has a PhD in Satellite Engineering and Space Science, and has 20 years technical and project management experience primarily in the Space sector encompassing both in-orbit and ground systems. Derek has worked in the UK, The Netherlands and Spain.

A key facet of Derek's activities is to understand and promote the application of knowledge and technology to deliver benefits to VEGA's clients. He has, therefore, an interest in following the emergence of next generation Internet/Grid technologies and in particular their applications outside academic environments.

Website: www.vega.co.uk

Email: derek.greer@vega.co.uk

Andrew Hide
LogicaCMG



LogicaCMG is a major international force in IT services and wireless telecoms. It provides management and IT consultancy, systems integration and outsourcing services to clients across diverse markets including telecoms, financial services, energy and utilities, industry, distribution and transport and the public

sector. Formed in December 2002, through the merger of Logica and CMG, the company employs around 20,000 staff in offices across 34 countries and has nearly 40 years of experience in IT services.

Andrew is an ex-RAF Officer with a Doctorate in Condensed Matter Physics. He has worked in a variety of commercial, academic and military environments (most recently the Defence Communications Services Agency in the UK and the Isaac Newton Group of Telescopes in the Canary Islands) in which he has specialised in Spacecraft, Ground Segment and Instrumentation technologies. He is currently a senior consultant within LogicaCMG's Space and Defence division engaged as a bid manager.

His interest in GRID technology is principally in investigating the potential for the development of generic applications for complex, secure and high-throughput data processing and dissemination in the fields of defence, navigation and earth observation.

Website: www.logica.co.uk

Email: andrew.hide@logicacmg.com

Iain le Duc
CODASciSys



CODASciSys (formerly Science Systems) is a publicly listed company formed in 1980 and employing over 850 people in the UK and throughout the world. SciSys is the software and consultancy division of the Group that builds technology solutions. Its Space & Defence division focuses on both the space and ground segments of, largely European, satellite programmes and Battlefield Information Systems Applications and Synthetic Environments of defence.

SciSys S&D pride themselves on keeping up to date with all technology areas that may have relevance to their business sectors. Iain is the Principal Consultant leading this activity within S&D, having a special interest in emerging technologies and development methodologies. In particular, GRID technologies have much to offer SciSys business sectors. SciSys has been involved in the UK Government's e-Science GRID programme since 2000 exploring the potential for GRID-based software technologies for databases and implementing Grid parallel processing prototypes. SciSys has established links with the e-Science and CEOS-Grid programmes underway in the UK. SciSys has been a major partner in the recently completed ESA SpaceGRID project and was responsible for developing software implementations of two separate aspects: Spacecraft-plasma interactions and Solar

System Research.

Iain is also involved with studies into how European organisations can work better in 'collaborations' or 'vertical organisations' for the European Space Agency, with a major aim being to improve the use of Earth Observation data access and usage. This is a multi-dimensional problem covering sectors as diverse as forestry, agriculture and Global Monitoring for Environment Security; and employing technologies as diverse as Peer-To-Peer, GRID (as used in DataGRID), distributed document control, sensor web, semantic web, video-conferencing, web-services and work-flow management.

Website: www.scisys.co.uk
Email: iain.le.duc@scisys.co.uk

Dr Harris Makatsoris Orion Logic Ltd



Harris is a founder and managing director of Orion Logic Ltd., a UK based, software and services vendor of adaptive supply chain optimisation and execution software.

Orion Logic's offerings are comprised of software technology and technical consulting services that enable operational control across extended manufacturing networks, enabling event capturing, event resolution management, cycle time compression and waste elimination. The company's target market includes semiconductor/high tech in addition to other target industries such as metalworking and textiles.

Harris holds a degree in Mechanical Engineering and a doctorate degree in Computer Aided Systems Engineering from Imperial College, London, with a specialisation in Production & Supply Chain Optimisation. He has published a number of papers in the area of production, supply chain and virtual organisation management and optimisation including the latest book entitled 'Evolution of supply chain management, Symbiosis of Adaptive value Networks and ICT, Kluwer Academic 2004.'

Grid computing and other technologies developed at CERN are of significance to Orion Logic because they are aligned with Orion's technological development plans. For those reasons, Orion regards a relationship with CERN of importance with particular focus on the following:

- Collaborative development of a commercial GRID middleware for large scale optimisation and simulation primarily targeting supply chains and

other optimisation applications

- Commercialisation of the e-business platform developed at CERN
- Use of CERN's GRID infrastructure as a testbed for Orion Logic's technologies

Website: www.orionlogic.com
Email: h.makatsoris@orionlogic.com

Dr Maziar Nekovee BT Exact



BT Group is one of Europe's leading providers of telecommunications services. Its principal activities include local, national and international telecommunications services, higher-value broadband and Internet products and services, and IT solutions. In the UK, BT serves over 20 million business and residential customers with more than 29 million exchange lines, as well as providing network services to other licensed operators.

Maziar gained his first degree in electrical engineering from Delft University of Technology in the Netherlands and his PhD in theoretical and computational physics from the University of Nijmegen, also in the Netherlands. Prior to joining BT in 2001 he was a research fellow at Centre for Computational Science, Queen Mary College, London where he worked on high-performance computing and visualisation of classical and quantum many-particle systems.

Maziar is a senior research scientist at BT Group's Research and Venturing division where he leads a collaborative e-Science project on Grid computing. Areas of research include high-performance multicast and unicast data transport for the Grid, mobility and peer-to-peer networks. Maziar Nekovee is the author of over 30 scientific papers in international peer-reviewed journals, a number of patents, and several publications on broader issues in science and technology.

Website: www.btexact.com
Email: maziar.nekovee@bt.com

David Palmer QinetiQ



David is a Business Group Manager in the Command & Intelligence Systems centre at QinetiQ Limited with an extensive background in software and systems engineering across a range of industries.

QinetiQ is a science and technology powerhouse with 8000 scientists and engineers at 62 working locations

in the UK, the largest security and defence research and technology business in Europe. It is a company with expertise that encompasses many fields, including energy and propulsion, sensors and electronics, chemicals and materials, software and systems, telecommunications and data, security, geosciences and space, human factors and medical science. While maintaining its strong link with the UK MoD forged as the Defence Evaluation and Research Agency, almost 20% of QinetiQ's business is non-defence.

David's group conducts research and development into new ways to integrate people and information technology for knowledge management and collaborative working. This work includes semantic web, software agents, machine learning, natural language processing, peer-to-peer and GRID computing.

Website: www.qinetiq.com
Email: wdpalmer@qinetiq.com

Paul Perkins Atos Origin



Atos Origin is a leading international IT services company and a global provider of business consulting and technology integration services. Atos is the exclusive IT provider for the Olympic games.

Common to all Atos Origin solutions is a unique full service, full lifecycle, 'design, build and operate' approach. Atos craft front-to-back office, end-to-end integrated services for clients across all functional, technical and geographic parameters. These can be tailored to meet all local and regional requirements and are delivered worldwide.

Paul has supported Oracle implementations at BT, ntl and Vodafone. He is currently at Canon Amsterdam consulting on a pan-European implementation.

Paul's interest in GRID technology is principally in investigating the potential for transferring and popularising this technology for commercial use. Utility Computing is one of the products being offered by Atos, but at present it has many limitations and the market is very small. He wants to develop, expand and demonstrate that this brand can be a viable solution and can be exploited in the many fields Atos are supplying in both public and private sector industries.

Website: www.atosorigin.com
Email: paul.perkins@atoskpmgconsulting.co.uk

FURTHER INFORMATION

For further information about the mission please contact:

Nathan Hill
Qi3 – Industry Coordinator for PPARC and
UK Technology Transfer Coordinator for
CERN

Managing Director
Qi3 Limited
St John's Innovation Centre
Cambridge
CB4 0WS
UK

Tel: +44 1223 422405
Email: nathan.hill@qi3.co.uk
Website: www.qi3.co.uk

