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Summary

This document is an evaluation of the first EchoGRID Conference, which was jointly organised with the EUChinaGrid project under the theme ‘Networking EU & Chinese Grid Experiences for Innovation’ and was held on 24-25 April 2007 at ICT, Chinese Academy of Science in Beijing, China. The conference was followed by a two-day ProActive Workshop, 26-27 April 2007.

The Conference was framed within a wider strategy aiming at focusing dissemination towards business and research communities, and decision-makers from governmental institutions, such as the EC Delegation to China and high-profile representatives from MOST, as well as a ‘win-win’ co-operation plan with the EUChinaGRID project. The main goals were to present complementarities between European and Chinese initiatives and state-of-the-art Grid developments, highlighting the aims of EchoGRID.

This Report outlines the conference strategy, the outcomes of dissemination activities to research and business communities, as well as press and media organisations in both regions. The main outputs of the diverse sessions and live demos are presented, together with the evaluation of the post-event survey. The final sections of the current document analyse the overall added value of the conference and identify a series of targeted actions for the 2nd EchoGRID conference.

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1 Conference Strategy & Main Outcomes

1.1 Conference Strategy

The joint Conference was hosted by EchoGRID partner, ICT (Institute of Computing Technology), CAS (Chinese Academy of Science). ICT offered its facilities, including the main conference room, a registration area manned by ICT/CAS personnel, catering area and services, networking areas, space and equipment for the live demos, internet connection, and equipment for presentations. The Conference area was clearly delineated by a room plan.

A **Conference strategy** (Trust-IT) was developed in order to co-ordinate joint activities between partners from EchoGRID and EUChinaGRID and clearly define a set of objectives. The Conference strategy set specific goals and identified beneficiaries from diverse groups (research, business, standards, government) in China and Europe. Additionally, the strategy defined the approach to joint branding and marketing of the event through the production of effective communication messaging, formulated a dissemination and outreach plan to both the targeted audience and press/media, and established the focus of the post-event survey.

The Partner '**Roles & Responsibilities**' Document outlined the specific tasks assigned to each partner and to EUChinaGRID representatives with regard to both the Conference Programme and all logistic and organisational aspects.

A **Programme Committee** comprising members from both projects was set up, in order to:

- establish the focus and expected outcomes of each conference session
- identify speakers and ensure the involvement of the experts targeted
- nominate panellists for the Roundtable
- collect presentation titles, abstracts and speakers' professional profiles
- set criteria for the Live Demo & Poster Session
- speaker and chair guidelines & chair hand-outs with details on each presentation
- update the Programme, which was the joint responsibility of Trust-IT/ERCIM and ICT/BUAA.

The **Organising Committee** between EU (ERCIM/Trust-IT) and China (ICT/BUAA) defined a series of tasks and task leaders to ensure the successful delivery of the conference. Key tasks include:

- populating the website
- provision of on-line registration form
- provision of Live Demo & Poster Application Form
- tracking of registrants & Live Demo applications
- logistics support & **Useful Information Guide**
- activities concerning the venue, signage and networking breaks
- activities concerning suppliers & financial issues
- conference documentation
- **Guide** for host/hostesses (Trust-IT) providing guidelines on procedures to follow and best practices to support the organisation of an international conference.

Most of the conference effort was spent by ERCIM/Trust-IT ICT/BUAA, providing support to the Programme Committee to ensure that the overall goals were achieved. Trust-IT was supported by the **joint EchoGRID and EUChinaGRID Task Force** with regard to dissemination activities, the delivery of promotional material and conference documentation.

1.2 Main Outcomes

The Joint EchoGRID & EUChinaGRID conference, 24-25 April 2007, Beijing, China brought together **187 participants** from China and Europe to discuss and showcase through both presentations and live demos state-of-the-art Grid technologies developed by both regions. The conference offered an important opportunity to:

- exchange knowledge and best practices on Grid development in China & EU
- discuss top-level technical challenges
- highlight benefits and opportunities for enterprises and the research/scientific community from both regions
- debate the role of standards in driving forward Grid adoption.

Additionally, participants benefited from *networking opportunities* aimed at strengthening existing and forging new collaboration in scientific domains and enterprise alliances.

The following list shows key organisational representation from both regions, followed by a detailed participant break-down in terms of country, organisation type and professional background:

- Active participation of key policy & decision-makers:
 - EC Delegation to China representative:1
 - EU Scientific counsellors:3
Counsellor of Science and Technology (1) & Scientific Assistant, Division of Science & technology (1), German Embassy in China;
Scientific Project Executive, French Embassy in China.
 - MOST representatives: 3
Deputy Director General, Department of High and New Technology and Industrialisation:1
Division of Information:1
Unit Director of International Co-operation:1
- Representation of top-level Chinese & EU research institutions:
 - CERN (CH); GARR (IT); GRNET (EL); ICCS/NTUA (EL); INFN (IT); INRIA (FR); NTUA (EL); SINA (DE-China).
 - Beihang University; Chinese Academy of Science (ICT/CNIC/Institute of Software); Cluster and Grid Computing Lab; NUDT; Peking University; Shangai Supercomputer Centre; Tsinghua university.

Distinguished academicians in attendance include Bohu Li, Chinese Academy of Engineering, President of the Institute of Automation, Science and Electron

Engineering (Beihang University) and of the Chinese Association for System Simulation).

- Several major EU & Chinese Grid projects showcasing Grid development:
 - CNGrid; CROWN; EUChinaGRID; EGEE-II; ETICS; K-Wf; NESSI & NESSIGrid; XtremOS.
- Representatives from EU & Chinese enterprises (small, medium and large enterprises) and business associations:
 - SMEs: Centre for Scientific Visualisation (SL); GridwiseTech (PL); eStarCom (CN); Intervision Software (CN).
 - Large enterprise: ATOS Origin (ES); Engineering (IT); China Mobile Group Design (CN); CVIC Software Engineering (CN); HP Lab China; Huawei Technologies (CN); Intel China Ltd; Lenovo Research (CN); SAP Labs China; TongTech (CN); UfSoft Ltd (CN).
 - Association of Enterprises Korea.
 - Synergy with the Euro-Chamber of Commerce (Beijing), the main support mechanism for EU companies in China, and its Working Groups.
- Representatives from national and global standardisation bodies:
 - OGF (HP Lab China)
 - Chinese e-Government Project Standard Committee (eStarCom), specifically National Information Resource Directory & Exchange Standard Development; State Department Information Sharing & Exchange Architecture Standard & Reference Guide.
 - Standard Steering Group (Lenovo Research).

Participation Breakdown

The number of event registrants through the project website prior to the conference was 160. The total number of participants attending the conference was 187 from China, Europe, and Asia/South Pacific:

Country	Number
China	157
EU	29
Korea	1

Table 1: Participation Breakdown

European countries represented include: France (5); Germany (4); Greece (5); Hungary (1); Italy (7); Netherlands (1); Poland (3); Slovenia (1); Spain (1); and Switzerland (1).

Organisation Type

Organisation Type	Representatives: China	Representatives: EU
Academia/research	131	17
Government/public administration (non-academia)	7	4
International Organisation	0	1
Private Commercial – Large Enterprise	14	2
Private Commercial – SMEs	5	2
Public Commercial	0	2
Private Organisation Non-Profit	0	1

Table 2: Organisation Type

The number of actual participants totalled 149, excluding chairs and speakers (32); live demo presenters (6), and press contact (1), with a number of the latter groups playing more than one role within the conference. Academic/research participation includes a considerable number of EUChinaGRID project partners and their research teams, as well as EchoGRID project partners, as part of the co-operation plan between the two projects, which has been formalised by a MoU. **Professional backgrounds** per category of attendants chiefly comprise:

- **Academia:** researchers (including research engineers), professors, directors of departments, executive directors, project co-ordinators/managers; PhD students.
- **Enterprise:** CTOs/senior technical directors, CEOs/directors/presidents, engineers, and executive managers.
- **Government/public administration:** heads of division; director deputy-generals; scientific counsellors and project executives.
- **Other:** executive and general managers; project managers.

2 Dissemination and Outreach

The joint **EchoGRID/EUChinaGRID Task Force** was led by Trust-IT and comprised representatives from ERCIM, and GARR with support from BUAA and ICT/CAS, in order to perform activities ensuring effective branding and marketing of the conference. Joint activities include the design and content of promotional material (fliers, brochures), conference documentation and packs with giveaways, targeted messages, and press announcements (Trust-IT with input from the Task Force). The messages and announcements disseminated and promoted both the joint Conference and the ProActive Workshops.

2.1 Conference Websites

Dedicated conference pages were created on the EchoGrid (ERCIM) website <http://echogrid.ercim.org/content/view/11/18/>, which targeted an EU and global audience. Mirror web pages in Chinese were also developed targeting organisations operating in China: <http://219.239.227.110/echogrid/>. The EchoGrid website (English) also hosted the **Secretariat** with the **on-line registration form; logistics support; conference programme** and **presentation information**; and **newsroom** section. A detailed conference announcement was also made on the English version of the ICT/CAS website:

http://english.cas.ac.cn/eng2003/page/res_link/res_link.asp The EUChinaGRID website (<http://www.euchinagrid.org/>) contained pertinent information on the joint conference and provided a link to the EchoGRID website.

A sample of the main EchoGRID web pages (English and Chinese) is given below:



Figure 1: English Website (ERCIM)



Figure 2: Chinese Website (BUAA)

2.2 Dissemination Material

The dissemination material was designed by the EchoGRID/EUChinaGRID Task Force, as indicated in the tables below. The first table shows the material produced for circulation among high-level project representatives and for the press and media.

Promotional Material and Texts	Distribution
Conference Programme (Trust-IT)	China National Grid project meeting, and on 973 program iVCE (Virtual Computing Environment) project meeting in March 2007 (ICT/CAS).
Conference invite in English & Chinese (Trust-IT; ICT/CAS;BUAA; GARR)	Pertinent contacts in China & Eu.
Conference Announcement (ERCIM; Trust-IT)	EU & Chinese press contacts
Day 1 & Day 2 Press Releases (Trust-IT)	EU & Chinese press contacts
Conference Report - English (ICT/CAS & Beihng)	Chinese press contacts

Table 3: Promotional Material & Texts

The material specifically designed for and distributed at the conference was the joint responsibility of both projects, supplementing material (fliers, newsletters) already produced and selected for distribution at the event. EUChinaGRID provided both a project flier and newsletter in both English and Chinese for distribution at the conference. The EGEE project also distributed project promotional material at the event. All the conference material, including promotional material, conference packs and giveaways, was jointly branded, with

the sole exception of the badge lanyards, which were provided by the EUChinaGRID project. The table below indicates the material distributed at the event.

Conference Pack & Documentation
Branded Conference Brochure (inserted in transparent folder) comprising Welcome message from EchoGRID & EUChinaGRID co-ordinators; EchoGRID project overview; EUChinaGRID project overview; EGEE project overview; ICT/CAS overview (as hosts); ‘at-a-glance’ programme; overview of each session with speaker information, live demo and poster session overview with individual pages dedicated to each demo; overview of the Pro-Active workshop and agenda. The Folder also contained supplements, such as the Participant Information Sheet; selected promotional material, in addition to updates on the Live Demo & Poster Session and the conference programme.
Conference Flier: promoting the event and outlining key features.
Branded ‘boutique-style’ bag containing the brochure, folder and giveaways.
Branded Giveaways: USB stick, pen, notepad.
Branded badges
EchoGRID Flier; EUChinaGRID Flier.

Table 4: Conference Pack & Documentation

In addition to the above material, ICT/CAS provided the **signage** (banners, direction indicators, displays of the programme and conference main theme).

2.3 Dissemination Activities

Dissemination to Multipliers & FP6 Projects

In this context, multipliers refer to research/scientific and business associations operating on a national and international level as well as associations supporting specific sectors. Invitations were sent to selected business and scientific associations, as well as to EU chambers of commerce operating in both China and Europe for circulation amongst members. One of the most fruitful contacts proved to be the **European Union Chamber of Commerce** (Beijing, www.europeanchambercom.cn), in that the EU Chamber circulated a targeted message to their enterprise members and to the members of the Energy and Utility Working Group.

A synergy was subsequently developed with the Chamber, the main support mechanism for European business in China, which will be valuable for future events and initiatives. The Chamber sent EchoGRID a copy of its *Executive Summary* of the seventh European Business in a Position Paper (2006-2007), which provides information on the EU companies operating in China, as well as on the benefits of operating there and the steps involved. Additionally, the support mechanisms of the Chamber were communicated and passed on to EU companies interested in attending the event.

Invites and announcements were also sent to the co-ordinators of on-going FP6 projects for active participation and for publication on the project website.

The table below outlines the circulation of invites in both China and Europe.

Trust-IT	GARR	ICT/BUAA University	ERCIM
1700 invites: Grid & e-	107 Chinese contacts;	China National Grid	250 Chinese contacts &

Infrastructure projects; Grid users from research & industry. Invite to the EC Delegation to China. Invite to the EU Chamber of Commerce (Beijing).	plus Grid users under NRENS.	project; 150 business contacts (provided by Trust-IT) of EU companies operating in China and Chinese companies. VIP invites.	360 European contacts from EC running projects (CoreGRID, Grid@Asia, GridComp...).
Press & media: 58 pertinent contacts	GARR & EUChinaGRID partners	National press contacts, including <i>ScienceTimes</i>	ERCIM Directors

Table 5: Dissemination Details

2.4 Results of Dissemination Activities

The three tables below illustrate the results of activities designed to promote the Conference and ProActive Workshop through China and EU press and media channels, as well as selected EC-funded projects. The tables provide details on Event Announcements; Press Cuttings and Post-event articles, indicating the channel, estimated/proclaimed circulation/readership with geographical scope, and the publication period/date. In this context, event announcements are categorised as conference overviews, whereas press cuttings refer to more complete coverage of the conference.

Event Announcements

Event announcements are conference overviews in event calendars/agendas published in on-line and print sources, such as IT, business and scientific journals, project websites and newsletters. Event announcements range from a reference to the event with a hyperlink to the conference website to a more detailed description. In the following table published conference announcements are cited.

Journal/website	Period & Circulation
NESSI Newsletter, April 2007, p. 2. Announcement with hyperlink also indicating NESSI participation at the conference.	April 2007 Circulation: 2000 contacts.
GEANT2 Media Centre: on-line events calendar http://www.geant2.net/server/show/conEvent.399	mid-March 2007-conference dates
NESSI website http://www.nessi-europe.com/Nessi/	End March-conference dates
EU-IndiaGrid Newsroom: http://www.euindiagrid.eu/newsroom/news/announcing-the-1st-international-echoGRID-euchinagrid-conference	28 march 2007 to 18 April inclusive
iSGTW (International Science Grid This Week), event calendar: www.isgtw.org	End March-conference dates
BELIEF website: www.beliefproject.org/ Events and news section.	End March-conference dates
LISTS GARR: http://lists.garr.it/pipermail/partners-euchinagrid/2007-April/000240.html	End March-conference dates
ERCIM News portal: http://ercim-news.ercim.org/content/view/235/395/ Event announcement and publication of press release day 1	End March-conference dates
EGEE II – related events section: http://www.eu-egee.org/egee_events/events/index_html/related_past_events	End March-conference dates

Latest news: http://www.eu-egce.org/news/1st-jointly-international-conference-echoGRID-euchinagrid/	10 April 2007
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Table 6: Published Conference Announcements

Press Cuttings

Press Cuttings refer to published announcements (in full or only partially edited/adapted) and press releases (in full or only partially edited/adapted), as well as independently written, adapted or edited articles/interviews providing coverage of the conference in both on-line and printed journals, and websites. The table below shows the published articles on the conference.

Journal/Website	Period & circulation
Europa - Europe's Information Society Newsroom - Thematic portal & news update Overview of the conference with key features. http://ec.europa.eu/information_society/newsroom/cf/menu.cfm	Daily issue as from 3 April 2007-conference dates
SEEGRID Website – press release http://www.see-grid.eu/content/modules/articles/Press_release_EchoGRID_April_conference.pdf	April 2007
<i>GridToday</i> . Article on the conference http://www.gridtoday.com/grid/1349268.html	3 April 2007
<i>Supercomputing</i> http://www.supercomputingonline.com/article.php?sid=13419	3 April 2007
<i>AlphaGalileo</i> : http://www.alphagalileo.org/index.cfm?fuseaction=Printevent&eventid=519538	3 April 2007
<i>GridsWatch</i> , Grid Computing Portal, 3 April 2007 http://www.gridswatch.com/index2.php?option=com_content&do_pdf=1&id=1073	3 April 2007
GARR News: http://www.garr.it/news/news-confer-engl.shtml	3 April 2007
<i>Science Times</i> (Chinese journal)	26 April 2007

Table 7: Published Articles on the Conference

Post-event articles

The following table indicates post-event articles on the conference.

Journal	Distribution
<i>ERCIM NEWS</i> , 70, July 2007, Conference Report, p. 66.	ERCIM News subscribers & website visitors
<i>ISGTW</i> – interoperability & standards (forthcoming)	3000 subscribers worldwide

Table 8: Post-event Articles

3 Conference Structure

The Final Programme is shown below.

Tuesday 24 April 2007	1st EchoGRID-EUChinaGRID International Conference, 24-25 April 2007, Beijing, China
09.30-13.30	EchoGRID-EUChinaGRID Opening Session
	Welcome Addresses
09.30-10.00	Dr Xiaohan LIAO, Deputy Director, High & New Technology Department, MOST Alison Birkett, Head of Information Society & Media, EC Delegation to China
	Keynote Address
10.00-11.30	Wenbo Mao, HP Lab China - <i>Grid Security via Two Levels of Virtualisation</i> Xintai Wang, eStarCom Inc - <i>SOA-based Information Sharing & Exchange Grid</i> Zhiwei Wang, Intervision Software Co. Ltd. - <i>Research & Development of Grid Middleware</i> Dongpu Fu, TongTech - <i>Research of SOA & Product Application</i>
	Chunheng WANG, Division of Information, MOST – <i>Grid-related Research supported by the High-Tech Programme China</i>
11.30-12.00	Networking Coffee & Tea Break
	Thematic Session 1 -Enterprise Challenges with Grids
12.00-13.30	Chair (China) Jacky Sheng, Huawei Co. Ltd. Chair (Europe) Andrea Manieri, Engineering Prof. Jun-Seok Hwang, Seoul National University & Head of Association of Enterprises Korea Pawel Plaszczyk, GridwiseTech – <i>Business & Industry Benefits: Grid Technology Case Studies</i> Dr Wei Zhou, CNIC (CAS) - <i>Integrating Scientific Data on Grid</i>
13.30-14.45	Networking Lunch
	Thematic Session 2 -Interoperability
14.45-16.15	Chair (China) Kai Nan, CNIC. Chair (Europe) Dr Federico Ruggieri, INFN Yongjian WANG, Beihang University – <i>Gateway-based batch job interoperability between CNGrid GOS and EGEE gLite</i> Jianxin LI, Beihang University – <i>CROWN-ST: A Security & Trustworthiness Architecture for CROWN</i> Dr Gang Chen, IHEP – <i>LCG: The Worldwide LHC Computing Grid</i>
16.15-16.45	Networking Coffee & Tea Break
	Live Demo & Poster Session
16.45-18.30	Demo 1: Maciej Malawski, Jagiellonian University – Biological Applications within EUChinaGRID Demo 2: Zhao Yongwang, Beihang University – Seismic Data Processing Demo 3: Yongqiang Zou: ICT – The VEGA Project Demo 4: Li Qin, Zhong Liang, Wo Tiangu, Tang Peng, Beihang University – CROWN Demo 5: Clement Mathieu, Denis Caromel, Yu Feng, INRIA – ProActive, the Java GRID Middleware Library Demo 6: Fabio Polticelli, University of Rome Tre – Rosetta Software for Protein Structure Prediction

Wednesday 25 April 2007	1st EchoGRID-EUChinaGRID International Conference, 24-25 April 2007, Beijing, China
09.30-11.00	Thematic Session 3 -New Programming Paradigms
	Chair (China) Yan Zhu, Beihang University. Chair (Europe) Prof. Thierry Priol, INRIA
	Prof. Zhiwei Xu, ICT (CAS) – <i>Network Centric Operating Systems</i>
	Andrea Manieri, Engineering – <i>The NESSI Vision on Research Challenges</i>
	Zsolt Nemeth, SZTAKI – <i>Distributed Workflow Co-ordination: Molecules& Reactions</i>
	Prof. Huamin WANG, NUDT – <i>Internet Virtual Computing Environment (IVCE)</i>
	Prof. Denis Caromel, INRIA – <i>Grid Component Model (GCM) and Active Objects: from Multi-Core to Grid Programming</i>
11.00-11.30	Networking Coffee & Tea Break
11.30-13.00	Thematic Session 4 – Management in Grids: The New Priorities
	Chair (China) Sijin Qian, Peking University. Chair (Europe) Dr Federica Tanlongo, GARR
	Prof. Zhongzhi Luan, Beihang University - <i>Making Management An Essential Attribute of Grid</i>
	Andrea Manieri, Engineering, representing the ETICS Project - <i>Toward A Quality Certification Model for Grid Research Project: an ETICS feasibility study</i>
13.00-14.00	Networking Lunch
14.00-15.30	Thematic Session 5 – Ongoing Research versus Enterprise Achievements
	Chair (China) Dr Gang Chen, IHEP Chair (Europe) Dr Federica Tanlongo, GARR
	Prof. Jinpeng Huai, Beihang University - <i>CROWN</i>
	Prof. Depei Qian - <i>CNGrid</i>
	Prof. Huamin WANG, NUDT – <i>Internet Virtual Computing Environment (IVCE)</i>
	Networking Coffee & Tea Break
15.30-16.00	
16.00-17.30	Thematic Session 6 – Roundtable on Future Collaborative Scenarios
	Chair: Prof. Taoying Liu, ICT/CAS. Panellists: Enterprise – Andrea Manieri, Engineering (IT); Pawel Plaszcak, GridwiseTech (PL); Jacky Sheng, Huawei Technologies Co. Ltd (China); Dongpu Fu, TongTech (China). Research – Prof. Depei Qian, Beihang University (China); Dr Federico Ruggieri, INFN (IT); Prof. Thierry Priol, INRIA (FR); Dr Florida Estrella, CERN (CH); Dr Federica Tanlongo, GARR (IT).
17.30-18.00	Closing Session Dr Federico Ruggieri, Project Co-ordinator EUChinaGRID; Prof. Thierry Priol, INRIA; Prof. Depei Qian, Beihang University

Figure 3: Final Programme

3.1 Welcome & Keynotes

3.1.1 Welcome Addresses

The Welcome Addresses by the EC Delegation to China and MOST played an important role in fostering the conference goal to forge and strengthen international co-operation opportunities and intensify strategic partnerships. The addresses underscored programmes designed to intensify collaboration for mutual benefit and how China and Europe can work together on common top priorities by forming ‘win-win’ partnerships. Specifically, the

opening ceremony was an important occasion to highlight current examples of co-operation and the international dimension of FP7 with opportunities for universities, research institutes and business, as well as the visions and support measures provided by the two regions. These Addresses underpinned the collaborative efforts of the Delegation and MOST and the jointly organised information events on research opportunities for China and Europe.

Presentation Focus: RTD programmes in Europe and China; co-operation between Chinese and European organisations in the field of RTD.

- Dr Xiaohan LIAO, Deputy Director-General, Department of High and New Technology Development and Industrialisation, MOST (Ministry of Science and Technology). This presentation focused on the current and future of the 863 High-tech R&D Program, as well as the key role of the conference in fostering co-operation between China and Europe in the field of research and development.
- Alison Birkett, Head of Information Society & Media, European Delegation to China, highlighting the Delegation’s mission to extend and intensify dialogue and co-operation in all of Europe’s areas of competence, particularly ICT research and the EU-China Information Society Project.

Background to this address was the EU Delegation’s mission to widen, deepen and intensify dialogue and co-operation in all EU areas of competence. From a trade & industry perspective, the presence of the Delegation at the conference has helped highlight and strengthen partner relations with the enlarged EU as China’s biggest trading partner and China now the EU’s second largest trading partner just behind the USA.

3.1.2 Keynotes

Focus: Grid research in China; R&D in Chinese industry, examples of Service Oriented Architecture (SOA) industrial research; Grid Security and Grid middleware development.

Presenters: 1 representative from Chinese government; 4 industry players: 3 from China and 1 global player on the ICT scene.

MOST representative:

- Chuncheng WANG, Division of Information, MOST. Presentation focus: China’s High-Tech Grid Research in R&D Programme.

4 Industrial Keynotes: HP Lab China; eStarCom; Intervision; TongTech

Speaker	Speaker Profile	Presentation Focus	Main outputs/Future Developments
Dr Wenbo Mao, HP Labs China	Principal Engineer at HP Labs China. Expertise: cryptography, computer security, Grid technology, especially Grid security. Regarding Grid security, Dr Mao co-chairs a research project ‘Trusted Computing for Grid Security’ in OGF (Open Grid Forum).	Current & future developments in Grid security. Grid & standardisation.	Insight into Grid security and the standardisation role played by the OGF.
Xintai Wang,	President and CEO. Expertise: software & middleware product	SOA based information sharing and exchange Grid.	EU & Chinese participants offered valuable insight into

eStarCom Inc	<p>development working with global ISVs. Milestones: eStarCom occupies market leader position in China.</p> <p>One of pioneers of the SOA concept.</p> <p>Active membership of e-Government Standard Committee: China National Information Resource Directory & Exchange Standard Development; and State Department Information Sharing & Exchange Architecture standard & Reference Guide.</p>	<p>Information sharing as a key development enabling business, government & scientific research to work more effectively in the information era.</p> <p>eStarCom Product Suite as solution for information sharing with examples for government information sharing and exchange network.</p>	<p>SOA developments and advantages.</p> <p>Adoption case studies.</p>
Speaker	Speaker Profile	Presentation Focus	Main outputs/Future Developments
Zhiwei Wang, Intervision Software	<p>Founder & CEO. Expertise: product management, system programming, R&D for Grid middleware.</p>	<p>Pervasive adoption of Grid computing. Grid Middleware is the powerful infrastructure of Grid application for connecting data, information, applications & services.</p>	<p>Experiences & visions from China's leader in the area of application integration platform technology. Case study of R&D Grid middleware to build Grid applications easily and speedily.</p>
Donpu Fu, TongTech	<p>Product manager and software architect for SOA. Expertise: software technology and project management, especially middleware development; SOA technology & methodology.</p>	<p>TongTech's experience in SOA R&D. SOA concepts, research, technology & methodology, software product development based on SOA. SOA success stories.</p>	<p>Insight into SOA concepts and technology developments. Case studies & success stories. Sharing SOA experiences. & TongTechIntegrator as state-of-the-art.</p>

Table 9: Overview of Keynote Addresses

3.2 Thematic Sessions

The Thematic Sessions were open to all conference participants. The themes were selected for their relevance to current and potential Grid communities in China and Europe: **Enterprise Challenges with Grids; Interoperability; New Programming Paradigms; Management in Grids; New Priorities;** and **On-going Research versus Enterprise Achievements.** Furthermore, the **Round-table** debate was intended to be an opportunity for both projects and participants to explore future collaboration opportunities across China & Europe and between a variety of organisations. The **Live Demo and Poster Session** played an important role in presenting state-of-the-art Grid technology to the audience.

Several major Chinese & EU Grid projects, including CNGrid, EUChinaGRID, ETICS, kW-f, NESSI & NESSIGrid, XtreamOS, and CROWN showcased their latest technological developments.

Key contributions include:

- Network centric operating systems. Analysis of problems in portability, development and debugging SOA programmes & introduction to research work ICT is currently undertaking, especially the Grid Service Mark-up Language (GSML) developed by Research Centre for Grid and Service Computing.
- Fundamental conceptual research on Grid programming models and service deployment were also presented.
- Sharing Grid research experiences with all audiences.
- Grid component model & research on the Active Objects. Presentation on ProActive, a Grid component development framework product developed by INRIA.
- Presentations on benefits of Grid adoption for business. Industry top-level challenges; adoption case studies; policy and strategic visions.
- Research achievements and challenges in diverse scientific domains, including Biology and Pharmacy.

3.2.1 Thematic Session 1 – Enterprise Challenges with Grids

This Session evaluated the increasing adoption of Grid by enterprises and how they can best drive forward their IT strategy. Case studies and surveys were provided on adoption across diverse sectors that are already benefiting from adoption. Major challenges for Open Grid Services were analysed and policy and strategy recommendations highlighted. The Session additionally offered insight into new R&D contexts that combine diverse disciplines, indicating how these frameworks can bring together academia and industry R&D departments for enhanced product & service development.

Chairs: Jacky Sheng, Huawei Co Ltd – China Chair; Andrea Manieri, Engineering, Italy – EU Chair.

Speaker	Presentation Title	Presentation Focus	Outputs/Future Developments
Professor Jun-Seok Hwang, Seoul National University & Head of Association of Enterprises Korea	Open Grid Challenges – Survey	<ul style="list-style-type: none"> ▪ Major challenges for Open Grid Services. ▪ Survey targeted Grid experts from diverse sectors & countries. 	<ul style="list-style-type: none"> ▪ Policy & strategy recommendations for the related business and government projects. ▪ Insight into industrial Grid adoption, regional perspectives, practices & opportunities
Pawel Plaszcak, GridwiseTech, Poland	Business & Industry Benefits – Grid Technology Case Studies	<ul style="list-style-type: none"> ▪ Sectors: Financial Services; Oil, Gas & Geosciences, Engineering, Education, Medical Institutions, Public Administration, Web Hosting; Media & Entertainment. 	<ul style="list-style-type: none"> ▪ Benefits & case studies on Grid adoption across diverse sectors. ▪ Insight into how corporations from all sectors integrate resources with their customers, benefiting from continuous resource exchange and information flow.
Dr Wei Zhou, CNIC (Computer Network Information Centre), (CAS)	Integrating Scientific Data on Grid	<ul style="list-style-type: none"> ▪ Research increasingly spanning disciplines, labs & organisations. 	<ul style="list-style-type: none"> ▪ New context for innovative research: geographically distributed & heterogeneous resources (computational systems, scientific tools, databases, sensors, etc).

Table 10 – Overview of Thematic Session 1

3.2.2 Thematic Session 2 – Interoperability

This Session explored some of the issues connected with interoperability, such as the virtualisation of resources, Grid architecture, P2P versus Client/Server, Open Source (OS) and middleware support, Service Oriented Knowledge Utilities (SOKUs), in addition to the interoperability of international Grid infrastructures, and trust and security across Grid infrastructures.

Chairs: Kai Nan, CNIC (Computer Network Information Centre) - China Chair;
Federico Ruggieri, University of Roma 3, Italy – EU Chair.

Speaker	Presentation Title	Presentation Focus	Outputs/Future Developments
Yongjian WANG, Beihang University	Gateway-based Batch Job Interoperability between CNGrid GOS and EGEE gLite.	<ul style="list-style-type: none"> ▪ EUChinaGRID gateway-based solution to implement batch job level interoperability with prototype for testing. ▪ Test bed: mechanism of pipeline-based gateway & its role in interoperability. 	<ul style="list-style-type: none"> ▪ Interoperability: problems solved & challenges ahead for technical audience. ▪ Example of collaborative work for middleware interoperability.
Jianxin LI, Beihang University	CROWN-ST: A Security & Trustworthiness Architecture for CROWN	<ul style="list-style-type: none"> ▪ Grid security issues regarding interoperability ▪ CROWN Grid research – policy negotiation, virtual organisation security management. ▪ Framework enabling distributed access control & dynamic trust establishment between service providers & consumers in Grid environment. 	<ul style="list-style-type: none"> ▪ CROWN-ST services: secure communication, authentication, access control, credential federation, trust management, negotiation. ▪ Interest in security architecture of CROWN middleware.
Dr Gang Chen, Institute of High Energy Physics (IHEP), China	LCG – The Worldwide LHC Computing Grid	<ul style="list-style-type: none"> ▪ LCG Grid project for HEP computing infrastructure for LHC experiments at CERN. ▪ Overview of architecture & design of LHC computing Grid 	<ul style="list-style-type: none"> ▪ Service Challenges programme; milestones for production quality Grid. ▪ Case Studies on LCG deployment in China. ▪ Presentation of interest to both general public and Grid experts. ▪ Interest generated in inter-domain/multi-disciplinary Grid.

Table 11: Overview of Thematic Session 2

3.2.3 Thematic Session 3 – New Programming Paradigms

This Session investigated technologies designed to generate new programming paradigms. These technologies comprise component models, development environments, such as debugging, testing, exception handling, in addition to the verification of properties across composed services and workflows. **Chair China:** Yan Zhu, Beihang University; Thierry Priol, INRIA, France – EU Chair

Speaker	Presentation Title	Presentation Focus	Outputs/Future Developments
Professor Zhiwei Xu, ICT (CAS), China	Network Centric Operating Systems	<ul style="list-style-type: none"> ▪ Essential issues regarding service-oriented programming. ▪ Complexity of existing approaches: low-level paradigms, lack of debugging, type checking. ▪ GSML: more tightly coupled applications; use of GSML to design & implement Grid middleware. 	<ul style="list-style-type: none"> ▪ Service-oriented programming based on research work of GPEL at ICT. ▪ Audience offered outline of new research frameworks by leading Grid research institution in China. ▪ Possibility of exploring future collaboration between INRIA & GPEL research.
Andrea Manieri, Engineering – Ingegneria Informatica, Italy	The NESSI Vision on Research Challenges	<ul style="list-style-type: none"> ▪ NESSI – EU-funded Technology Platform promoted by 13 major EU software enterprises. ▪ NESSI aim: foster synergies & co-operation platform for future service-based economy for EU. NESSIGrid aim: foster collaboration for the Grid research Area & support NESSI for Strategic Research Agenda in context of Grid & Service-oriented infrastructure. 	<ul style="list-style-type: none"> ▪ Current milestones: involvement of interested companies & Working Groups focusing on future research challenges. ▪ Audience offered EU perspective on Grid & transition towards a service-based economy for EU. ▪ Interest generated from China.
Zsolt Nemeth, SZTAKI, Hungary	Distributed Workflow Coordination: Molecules and Reactions	<ul style="list-style-type: none"> ▪ Chemical programming for workflow enactment in the context of Grids. ▪ Abstract co-ordination model based on gamma-calculus, highlighting existing deadlock in the gamma model & locality issues for an efficient implementation of chemical models. 	<ul style="list-style-type: none"> ▪ Top-level challenges: decentralised control, autonomy, adaptation to high dynamics & partial lack of information. ▪ Need for more examples of practice in real environments to demonstrate effectiveness.
Denis Caromel, INRIA, France	Grid Component Model (GCM) & Active Objects: from Multi-Core to Grid Computing	<ul style="list-style-type: none"> ▪ Pro-Active Project as part of EC-funded project CoreGrid. 	<ul style="list-style-type: none"> ▪ Milestones for Pro-Active object technology of Grid dynamic parallel architecture. ▪ Offered audience EU perspective on Grid technology developments.

Table 12: Overview of Thematic Session 3

3.2.4 Thematic Session 4 – Management in Grids: New Priorities

This session looked at new priorities for management in Grids, such as resource management, scheduling, applications and accounting; workload features & benchmarks; quality assurance processes and distributed application software; as well as service level agreements (SLAs) and contracts for Grid infrastructures.

Chairs: Sijin QIAN, Peking University.

Speaker	Presentation Title	Presentation Focus	Outputs/Future Developments
Zhongzhi LUAN, Beihang University	Making Management An Essential Attribute of Grid	<ul style="list-style-type: none"> ▪ How to manage the result of Grid computation & the technology developed for it. ▪ Presentation targeting Grid computing architecture designers & Grid users. 	<ul style="list-style-type: none"> ▪ Security & effectiveness of management, especially for the management of poorly functioning components of the Grid infrastructure.
Andrea Manieri	Towards a Quality Certification Model for Grid Research Project: an ETICS Feasibility Study	<ul style="list-style-type: none"> ▪ EC-funded project ETICS aiming to provide a Quality Assurance Certification Process (QACP) with 4 levels of testing. ▪ Presentation targeting Grid computing managers, architecture designers, and Grid users. 	<ul style="list-style-type: none"> ▪ Perspective on EU Grid technologies. ▪ Interest as to the possible need for Grid performance test for similar projects. ▪ Interest as to possible sequential testing levels.

Table 13: Overview of Thematic Session 4

3.2.5 Thematic Session 5 – Ongoing Research & Enterprise Achievements

This Session explored a number of current research initiatives and projects from a national and cross-regional perspective. Three presentations focused on key Chinese Grid initiatives, such as ChinaGrid, a national effort running under the direction of the China Ministry of Education. Presentations also demonstrated some of the main achievements in Grid technology made by enterprises, in order to help develop a technology and industrial-research agenda for future advancements. **Chairs:** Dr Gang Chen, IHEP - China Chair; Federica Tanlongo, GARR, Italy - EU Chair.

Speaker	Presentation Title	Presentation Focus	Outputs & Future Developments
Professor Jinpeng Huai, Beihang University, China	CROWN	<ul style="list-style-type: none"> ▪ Introduction to the CROWN system. ▪ Presentation targeting general public as well as experts ▪ Bridging computing resources & applications. ▪ New internet as a service network. ▪ New paradigm for programming: shift away from top-down to bottom-up: customised composition of on-demand services. 	<ul style="list-style-type: none"> ▪ High-level vision of Grid computing & the internet. ▪ Major challenges: security & trust & delicate balance between openness & control. ▪ Key elements: virtualisation, adaptability & dependability.
Professor Depei Qian, Beihang University	CNGrid: Today and Tomorrow	<ul style="list-style-type: none"> ▪ Introduction to CNGrid, the China national Grid. ▪ Infrastructure, computing capacity, middleware architecture, applications. ▪ 863 key project: High Productivity Computer & Grid Service Environment. Objectives & research focus. ▪ Presentation targeting general public as well as experts. ▪ Evolution is closely connected with national programme (2006-2010). 	<ul style="list-style-type: none"> ▪ Applications are a key success factor. Four main areas identified plus case studies. ▪ National Programme & collaboration with EUChinaGRID & EchoGrid, plus other EC-funded projects. ▪ Interest in gridification of legacy systems & possible approaches. ▪ Possible evolutions in middleware development.
Professor Huamin WANG, NUDT (National University of Defence Technology), China	Internet Virtual Computing Environment (IVCE)	<ul style="list-style-type: none"> ▪ On-demand aggregation & automatic collaboration of internet resources. ▪ Creation of a platform to evaluate & estimate the quality & reputation of services & community. 	<ul style="list-style-type: none"> ▪ Challenge: developing metrics to measure quality & reputation.

Table 14: Overview of Thematic Session 5

3.2.6 Roundtable - Future Collaborative Scenarios

The panellists were a mixture of enterprise and research representatives:

Enterprise: Engineering (IT); GridwiseTech (PL); Huawei Technologies Co. Ltd (CN); TongTech (CN).

Research: Beihang University; INFN (IT); INRIA (FR); CERN (CH); GARR (IT).

The Roundtable was chaired by Prof. Taoying LIU, ICT/CAS.

The Roundtable initially centred on past collaborative experiences and approaches. Feedback highlighted diverse approaches, such as conferences, dissemination activities, project partnerships, expertise and knowledge exchange. The general consensus was that collaboration is most likely to succeed in areas, such as interoperability; dissemination through events and publications; training; and the development of common tools.

The debate subsequently focused on the issue of standards and how the two regions can work together to achieve global standards. One of the key points raised was that requirements and priorities differ considerably between industry and research, with industrials underscoring the pressing need to start working on standards immediately. The discussion thus demonstrated that standardisation is a top priority for industry and that the goals can only be achieved by dedicated standardisation organisations.

The post-event survey circulated to participants further highlighted the need for *standardisation* and indicated how this key requirement is linked to *interoperability* and *innovation* on a global level. Respondents were invited to indicate in an open-ended question format the most beneficial areas of collaboration between China and Europe. The list below shows the most recurrent responses:

- Interoperability
- Standardisation for Grid technology
- Technology & Technical communication
- EUChinaGRID Project and the connectivity of EU-China Grid infrastructure
- Working together to help develop more applications of the Grid technology in China
- Working with colleagues in Europe

3.3 Live Demo & Poster Session

The main objective of the Live Demo & Poster Session was to showcase state-of-the-art Grid technology and Grid-enabled applications developed by China & Europe, offering opportunities for interactive discussions.

Interested applicants marked a request for the Live Demo Application Form upon registering for the conference through the EchoGRID website (ERCIM). Applications were subsequently approved according to relevance and value-add.

Demo 1	Title	Overview	Added Value
EUChinaGRID Project - Biological applications. EUChinaGRID, presented by Jagiellonian University (PL)	Never Born Proteins Project	Never Born Proteins application was developed within the EUChinaGRID project. The Early and Late Stage protein folding simulation is running on the pilot infrastructure including European and Chinese Grid sites. Portal for automatic management of large amount of jobs & interactive visualisation of predicted protein structures.	<ul style="list-style-type: none"> ▪ Application successfully ported & executed on the intercontinental Grid infrastructure. ▪ Opportunity for bio-informatics researchers from China to collaborate with this initiative.
Demo 2	Title	Overview	Added Value
Beihang University; project on seismic data processing and visualisation in Earth Sciences.	Collaborative Visualisation of large-scale seismic data	Web-based synchronised collaborative visualisation of large-scale seismic data using web services & rich web clients supporting collaborative visualisation in web browsers. A seismic data of 2GB with different web clients operating on the data collaboratively.	<ul style="list-style-type: none"> ▪ Remote visualisation of the same seismic data on Personal Digital Assistant (PDA). ▪ Learning how web service technology can be used to support collaborative application processing of large-scale multimedia data.

Demo 3	Title	Overview	Added Value
Research Centre for Grid & Service Computing (VEGA Centre) , ICT-CAS	VEGA GOS Overview	Dynamic and virtualised resource management based on services. Job management between distributed HPC centres. Information sharing between distributed and heterogeneous databases.	<ul style="list-style-type: none"> Showcasing integration of legacy applications & reliable message pub/sub. Collaboration based on Grid workflow. Service-oriented security mechanism.
Demo 4	Title	Overview	Added Value
Beihang University: Representatives from CROWN	CROWN	CROWN key features (functions of resource organisation & management, GUI IDE for developers, user-friendly configuration & security interoperation). CROWN Grid Portal, using CROWN Portal to browse the resources of the entire Grid system, the CROWN Portal to submit an application job.	<ul style="list-style-type: none"> CROWN Programming CROWN Portal to monitor the resources of the grid system. Environment: CROWN Designer to develop, deploy, and query a CROWN service; CROWN Security, using Auto Trust Negotiation (ATN) to secure the deployment service.
Demo 5	Title	Overview	Added Value
INRIA (FR)	The ProActive Demo	ProActive is the Java GRID middleware library (under LGPL license) for parallel, distributed and multi-threaded computing. With a reduced set of simple primitives, ProActive provides a comprehensive API to simplify the programming of Grid Computing applications: distributed on LAN, on clusters, or on Internet GRIDs.	<ul style="list-style-type: none"> ProActive is only made of standard Java classes, leaving programmers to write standard Java code. Architected with interception and reflection, the library is itself extensible. Featuring fault-tolerance, load-balancing, mobility, and security, ProActive brings the power and ease-of-use of an Application Server in the world of GRIDs. Key qualities are Portability, Agility and Extensibility : Write Once, Deploy Everywhere
Demo 6	Title	Overview	Added Value
EUChinaGRID Biological Applications, presented by Rome University (IT)	Rosetta Software for Protein Structure Prediction	Example of how IT tools have become fundamental in Biomedical research. The demo shows the Rosetta software for protein structure prediction can run on the GRID infrastructure using a user friendly interface developed within the GENIUS web portal.	<ul style="list-style-type: none"> Showcasing the adoption of Grid tools to improve knowledge of protein structure and folding. Illustrating how the Grid infrastructure can be accessed by and be useful to scientific communities without a high level of computer expertise, as is often the case with the community of biologists.

Table 15: Overview of Live Demos

4 Conference Survey

4.1 Post-event Survey

In order to obtain pertinent information from conference participants, a post-event survey was administered to each of the participants. The survey was designed by Trust-IT and circulated with the support of ICT/CAS and BUAA. The general consensus emerging from the survey is that the event has brought a higher understanding of Grid developments in China and EU, underscoring both the need and receptive audience for more events and opportunities like this. Numerous attendants now have a better understanding and would like to learn more about the EchoGRID project, what it is trying to achieve, and how it aims to do so.

All the sessions were viewed as being of interest and relevance. Parts believed to be most valuable and with a higher impact include:

- Thematic Session 1 on Enterprise Challenges with Grids
- Thematic Session 2 on Interoperability
- Thematic Session 3 on New programming Paradigms.

Several participants expressed appreciation of the presentation by Professor Depei Qian from CNGrid as one of the most informative talks, as well as talks on applications of Grid computing, an area in which participants from China feel they have much to learn from EU. The most practical useful session was seen to be the **Roundtable**, offering interactive discussions and highlighting key areas of future collaboration and the pressing need to work more closely on standardisation. However, the reoccurring theme was not only the **live demos** bringing the most value, with participants responding that this is an element that they would like to see more of at future events. Consequently, this important component needs to be consistently implemented as participants find dynamic material captures attention and is most effective in conveying latest developments.

Moreover, most of the participants expressed that they now have a better knowledge of Grid and synergies between the two regions, ongoing research and current valuable implementations and future research opportunities. Participants also stated that they had made key contacts in various fields and the understanding of EU-China collaboration was very encouraging. One participant took away from the conference the conviction that he was now better placed to manage Grid-focused activities.

Respondents also underscored how future conferences will need to implement various elements into the programme such as longer sessions on interoperability as one of the emerging key issues and more time for questions and answers to allow participants to interact with the speakers on an immediate basis.

The overall general opinion was that the conference was informative, useful, and that participants have taken away key contacts and information to progressively more towards the future.

4.2 Endorsements

Industrialists

The conference in Beijing was certainly an important experience for me. Introducing large distributed infrastructures in China must be based on a mix of lessons drawn from Europe and USA, as well as local experience and requirements. It was encouraging to see the positive attitude of both sides to build effective and long-lasting cooperation.

Pawel Plaszczak, President of GridwiseTech, EU SME

EUChinaGRID Participants

I attended the EchoGrid- EUChinaGRID conference in April. It was a good conference to show co-operation between China and Europe in the field of Grid technology. Grid applications in China and EU were my favourite topics in the conference. I have learned much from the presentations and some points to improve Grid applications.

Dr. Bo Li, Assistant Prof. / Lecture, Researcher of Project EUChinaGRID

Communication and co-operation activities are very important to make progress in both the project and the technology. It was an honour to attend the joint conference and give a presentation to the audience. In my opinion, the emphasis of Grid technology research is shifting from infrastructure construction to application support. A large number of applications have already been addressed by Grid technology especially those with problems of analysis of large data archives or requesting huge computing resources. Application support has also been addressed by projects both in Europe and in China such as EGEE: High Energy Physics, Biology, Earth Observation, Biomedicine, Astrophysics and Computational Chemistry, and CNGRID: Resource and Environment, Research, Services, Manufacturing. How to make the interoperability of cross-domain and heterogeneous infrastructure and achieve integrated management of the whole Grid environment are challenges of Grid application. I hope we can make further progress on Grid technology through activities of the project.

Dr. Zhongzhi LUAN, Associate Professor, Researcher of Project EUChinaGRID

This conference is a milestone in Grid co-operation between China and Europe. We discussed the development of important Grid research initiatives and programmes in China and EU, requirements from applications and users, major issues to overcome in future Grid research and studies and a roadmap for Grid research. Software sharing and computing sharing are the main benefits of Grid technology. As a successful Grid adoption user, it is easy to use a super computer to complete a task. Users can program a task at their own computer, and easily run it on a super computer. Users can accept the reasonable the cost of using Grid resources, and this cost is much lower than purchasing and managing the entire infrastructure.

Ms Danfeng ZHU, Staff of Sino-German Software Institute, Beihang University, EUChinaGRID Project

EchoGRID

It was an honour to take part in the EU & Chinese Grid meeting in April in Beijing, China. In addition, the conference gave a whole introduction of Grid developments in EU & China. In my opinion, interoperability around Grid and ongoing research versus enterprise achievements were most valuable. Different partnerships between EU & China have many advantages and we hope everyone could share experiences and advance Grid research through the conference and collaborative networks. Then do research on enterprise

challenges with Grid, and make research achievements of Grid used in our everyday lives and work. Being a member of Beihang University, and occupying the administrative and financial management in the EchoGRID project, the meeting helped me understand more about the project and all partners, assisting me in my work.

Ms Yan WU, Executive Assistant of Sino-German Software Institute of BUAA, Project EchoGRID

4.3 Grid Adoption Survey Results

The post-event survey also contained several questions designed to understand how participant view the benefits, barriers and success metrics of Grid adoption, both in science and business. Most participants agreed that Grid underpins broader strategic IT objectives (87%); others believe it partially does so, while the minority were not entirely convinced that it forms part of broader objectives. The table below shows the main results in order of frequency.

Grid Adoption Survey: Main Benefits
Resource sharing & enabling collaboration (across institutions and geographical boundaries).
More computing power & higher performance
Increase access to data & collaboration
Rapidly allocate resources for mission-critical challenges & accelerate time to get results
Infrastructure Optimisation
Using resources more efficiently
Promoting operational flexibility
Using legacy applications
Increasing productivity
More storage capacity

Table 16: Grid Adoption Survey: Main Benefits of Grid

Grid Adoption Survey: Main Barriers to be overcome
Complexity; complicated programming and configuration details. Grid technology is not mature enough and complex to use. Varying levels of difficulty depending on type of user.
Current insufficient number of applications
Lack of standardisation. Interoperability should be based on standards & security issues.
Lack of interoperability between heterogeneous platforms
Adoption should comply with standards by different organisations and implement systems accordingly
Too many legacy applications and Grid middleware is not stable or does not sufficiently meet the actual application requirements
Efficiency & effectiveness
Fault occurrences & possible unreliability. Lack of efficiency for cross-regional operations
Security
Different ways to develop Grid - European Grid is application driven while Chinese grid is technology driven

Table 17: Grid Adoption Survey: Main Barriers to Grid Adoption

Grid Adoption Survey: Main Success Metrics
Wider deployment in science and business. The number of real business or scientific applications.
Applications achieving goals that are not possible to achieve if without Grid
Efficiency & effectiveness

Table 18: Grid Adoption Survey: Main Success Metrics for Grid Adoption

The following statement sums up some of the main points expressed: ‘The main benefits of Grid is to integrate resources into a large virtual machine, which produce high performance and reliability. The network and other infrastructure prevent the Grid from achieving high popularity. Generally, the Grid is not easy to use in a common way. Most programmes, including many complex ones, cannot run in parallel, which also stops them running on Grids. When an application running on Grids achieve high performance similar to a supercomputer, it is a successful adoption for Grids like LCG. The more applications on Grids, the better the resources can be shared. When the Grids hold enough resources, they will be a research platform for all areas.’ Dr. Bo Li, Assistant Prof. / Lecture, Researcher of Project EUChinaGRID.

5 Conference Impact

5.1 Main achievements

The joint EchoGRID & EUChinaGRID conference engaged the support of both the European Commission and the Chinese Ministry of Science and Technology (MOST), enabling the project to base its preliminary strategic vision and help set an agenda for Grid development in both research and industry within the framework of the European **Next Generation Grid** expert group and on the Chinese **863 High-tech programme**.

The conference was beneficial to both EchoGRID and the EUChinaGRID projects, as part of the co-operation plan, bringing together experts and partners to share and exchange experiences and strategic visions. The conference offered its participants ample opportunities to network and made new contacts, as well as evaluate the current status of Grid development in China and Europe and understand how to drive forward further development.

Regarding the conference structure, it proved to be effective and helping to showcase achievements both through a rich mix of presentations and the live demos. Additionally, the structure enabled active debate between participants and brought to light a number of key challenges and issues.

Participants were offered an important opportunity to exchange views about the state of the art and the latest achievements and top-level challenges in Grid research. The requirements from the users and the importance of early involvement of industry in the area of Grids were emphasised. In addition, the conference highlighted how important issues must be addressed in future research projects. These discussions are considered to be extremely valuable for drafting the roadmap for Grid research and development.

The event has demonstrated the importance of mobilising communities through conferences organized within a project like EchoGRID, and how the project is playing a key role in helping organisations in fast-moving technological sectors by providing appropriate knowledge-exchange.

The conference has been widely viewed as a milestone in European and Chinese co-operation on Grid research. It is of significant importance in promoting Grid research and Grid infrastructure deployment in both Europe and China.

5.2 The Role of Standards

The discussions on standards during the Roundtable and the outcome of the post-event survey fit well with the view that Standards are the most important single measure for achieving interoperability. Specifically, it is important to take on board how innovation and standards are intimately bound up, with innovation benefiting from standards in diverse ways just as standards for interoperability are essential for allowing innovations to complement existing products and services and integrate existing systems, allowing open markets and competition. Additionally, it is important to note that in some instances the prior development of new standards is a prerequisite for the provision of new products or services. Key challenges to tackle are: the availability, adoption and implementation of standards, support measures and the active engagement of support mechanisms.

Mobilising business and research communities and standardisation bodies through conferences like this will play a key role in ensuring an effective two-way dialogue between China and EU, pinpointing scientific and industry requirements and targeted actions in the drive towards global standardisation.

5.3 Target Improvements

Despite concerted effort to engage industry more actively in the conference, the targets for industrial participation (target: 35%: 20% large enterprise; 15% SME) were not fully reached. Additionally, EU participation was lower than expected (target: 35%).

The main reason for this is the timing of the conference as many current project partners reported that they were unable to attend mainly due to the first call of FP7. Additionally, some FP6 projects were drawing to a close, and a number of key Grid & industry events were scheduled for the same week. For example, the Future Grid event in London (23-26 April) attracted a large number of industrialists, mainly from Finance but also from other sectors, which made it difficult to attract players especially from the UK.

The considerations in the section below identify a series of concrete and feasible proposals to resolve similar difficulties in the future.

6 Considerations & Next Steps

The 2nd Conference will be structured to ensure higher participation from EU and business by including not only plenary sessions targeting both research and industrialists but also parallel sessions targeting specific groups. In addition to technical parallel sessions including interoperability, a dedicated Business Track will be organised. The objective of the Business Track will be to highlight the benefits and

evaluate the challenges associated with Grid adoption by enterprises. Sessions will focus on vertical markets relevant to both regions, to understand current Grid adoption strategies as well as new market opportunities, with particular reference to the content of D1.1 and D1.2. The business sessions will also comprise presentations by representatives from standardisation bodies, in order to ensure close interaction between industry requirements and open Grid standards. Each technical and business parallel session will conclude with an interactive panel discussion for effective two-way dialogue between speakers and audience. Detailed conference reports will also be beneficial by highlighting technical achievements, adoption case studies, top-level challenges, key topics of interest to business and science communities, and requirements for standards.

The organisation of the 2nd conference will take into account the importance of timing particularly from a EU perspective. Concerted effort will be made to ensure early targeting of EC-funded projects and industry by building on current contacts and relations established with businesses in EU27 and Grid support organisations.

Specific Targets

1) Increase participation from industrialists operating in both China and Europe by:

- Aligning existing and new business contacts with the market analysis (D1.2).
- Building on and strengthening relations with the Business Development and pertinent working groups of the European Union Chamber of Commerce.
- Exploring the possibility of organising a focused networking event with the support of the EU Chamber in Beijing before the next conference.
- Developing strong relations with industry associations in EU and making targeted messages for EU business press and media.
- Analysing the reports of government agencies such as the FDI (UK) and EU relations with China through similar government agencies.
- Targeting messages to Chinese & EU companies operating in diverse vertical markets in China, as well as relations between CAS & the BP Group.
- Leveraging on the case studies cited in D1.1 to effectively convey the uses and benefits of Grid in diverse vertical markets.
- Early targeting of industrial-focused FP7 projects to ensure active participation.
- Ensuring effective two-way collaboration between the project and industrialists through dissemination activities and event attendance.

2) Increase EU participation by:

- Early targeting of new projects coming into operation.
- Creating a dedicated DB that includes information on EU and nationally funded research projects, research and scientific associations to evaluate the benefits of attending and of active participation.

3) Increase the active engagement of standardisation bodies from main standardisation bodies, such as OGF, ETSI, W3C & W3C office in Beijing by:

- Keeping informed of the main activities, conclusions and recommendations of these groups.
- Communicating the main outcomes regarding standards emerging from the 1st conference.
- Ensuring buy-in from industrialists and members of standard groups attending the first conference by surveying their requirements.
- Actively engage with EU & global initiatives promoting global Grid standards.

7 Annexes

7.1 Annex 1 – Participant List

The tables below indicate participants from China, Europe, and Asia-South Pacific. The tables show name, organisation, organisation type, country, and conference role.

Title	Name	Organisation	Organisation type	Country	Conference Role
	Alison Birkett	EC Delegation to China, Head of Informaiton Society & Media	Government/Public Administration (non-academia)	Europe	Speaker
Dr	Matthisa Hack	German Embassy in China, Counsellor of Science & Technology	Government/Public Administration (non-academia)	Germany	Participant
Dr.	Baiyu Zhang	German Embassy in China: Scientific Assistant, Division of Science & Technology	Government/Public Administration (non-academia)	Germany	Participant
	Yannick Lannes	French Emabassy in China, Scientific Project Executive	Government/Public Administration (non-academia)	France	Participant
Ms	Csilla Zsigri	ATOS Origin	Private Commercial Organisation – Large Enterprise	Spain	Participant
Dr.	Tomaz Amon	Centre for Scientific Visualisation	Private Commercial Organisation - SME	Slovenia	Participant
Dr.	Florida Estrella	CERN	International Organisation	Switzerland	Participant
Ms	Katerina Emmanouilidou	Club Serron for Unesco	Academia / Research	Greece	Participant
Dr	Hai Xiang Lin	Delft University of Technology	Academia / Research	Netherlands	Participant
	Andrea Manieri	Engineering - Ingegneria Informatica	Private Commercial Organisation – Large Enterprise	Italy	Chair/speaker
	Kalliopi Paulopoulou	European Centre Young South Europe	Private Organisation Non-profit	Greece	Participant
Dr.	Federica Tanlongo	GARR	Academia / Research	Italy	Chair
Ms	Gabriella Paolini	GARR	Academia / Research	Italy	Participant
	Pawel Plaszcak	GridwiseTech	Private Commercial Organisation - SME	Poland	Speaker

Mr	Zsolt Nemeth	MTA SZTAKI	Academia / Research	Hungary	Speaker
Mr	Dimosthenis Kyriazis	NTUA	Academia / Research	Greece	Participant
Dr	Yan Peng	INRIA	Academia / Research	France	Live Demo presenter
	Maciej Malawski	Jagiellonian University	Academia / Research	Poland	Live Demo presenter
	Katarzyna Prymula	Jagiellonian University	Academia / Research	Poland	Participant
Mr	Clement Mathieu	INRIA	Academia / Research	France	Live Demo presenter

Mr	Ping Wang	SINA	Academia / Research	German-China	Participant
Dr.	Fabio Polticelli	University Roma Tre	Academia / Research	Italy	Live Demo presenter
Dr	Xiaohan LIAO	MOST, Deputy Director-general, Dept of High & New Technology Development &	Government/Public Administration (non-academia)	China	Speaker
	Chunheng Wang	MOST, Division of Information	Government/Public Administration (non-academia)	China	Speaker
Mr	Jijun XING	MOST, Unit Director of International Co-operation	Government/Public Administration (non-academia)	China	Participant
Dr.	Bo Li	Beihang University	Academia / Research	China	Participant
	Jianxin Li	Beihang University	Academia / Research	China	Speaker
Ms.	Danfeng Zhu	Beihang University	Academia / Research	China	Participant
Dr (PhD Student)	Dou Sun	Beihang University	Academia / Research	China	Participant
	Rui Wang	Beihang University	Academia / Research	China	Participant
Dr	Yan Zhu	Beihang University	Academia / Research	China	Chair
	Peng Tang	Beihang University	Academia / Research	China	Participant
	Xiaohu Tong	Beihang University	Academia / Research	China	Participant
	Xiaoyuan Bai	Beihang University	Academia / Research	China	Participant
	Yongjian Wang	Beihang University	Academia / Research	China	Speaker
Mr	Zhong Zheng	Beihang University	Academia / Research	China	Participant
Dr	Zhongzhi Luan	Beihang University	Academia / Research	China	Speaker
	Bingheng Yan	Beihang University	Academia / Research	China	Participant
	YuanQiang Huang	Beihang University	Academia / Research	China	Participant
	Kunyi Luo	Beihang University	Academia / Research	China	Participant
	Chao Zhou	Beihang University	Academia / Research	China	Participant
	Mu Li	Beihang University	Academia / Research	China	Participant
Dr	Chen Gang	Beihang University	Academia / Research	China	Speaker
	Zhao Yongwang	Beihang University	Academia / Research	China	Live Demo presenter
Prof.	Jinpeng Huai	Beihang University	Academia / Research	China	Speaker
Prof.	Depei Qian	Beihang University	Academia / Research	China	Speaker
Prof.	Chunming Hu	Beihang University	Academia / Research	China	Participant
Prof.	Dianfu Ma	Beihang University	Academia / Research	China	Participant
Doctoral student	Fang Yang	Beihang University	Academia / Research	China	Participant

	Jing Li	Beihang University	Academia / Research	China	Participant
Doctoral student	Lian Zhong	Beihang University	Academia / Research	China	Participant
Doctoral student	Qin Li	Beihang University	Academia / Research	China	Participant
Doctoral student	Xing Yang	Beihang University	Academia / Research	China	Participant
	Long Hao	Beihang University of Technology	Academia / Research	China	Participant
Dr	Yi Liang	Beihang University of Technology	Academia / Research	China	Participant
	Meiyan LIU	BITI	Academia / Research	China	Participant
	Bing Xu	BUPT	Academia / Research	China	Participant
	Fudong Li	BUPT	Academia / Research	China	Participant
Dr	Yongzhu Liu	CAMS	Academia / Research	China	Participant
	Yuan Chao XU	Capital Normal University	Academia / Research	China	Participant
	Juntao Cheng	CAU	Academia / Research	China	Participant

	Deng Guang	China Academy of Forestry	Academia / Research	China	Participant
	Ying Guo	China Academy of Forestry	Academia / Research	China	Participant
	Zhenjiang Ge	China Agriculture University	Academia / Research	China	Participant
	Lin Zhang	China Mobile Group Design Institute	Private Commercial Organisation – Large Enterprise	China	Participant
	Tao Liu	China Mobile Group Design Institute	Private Commercial Organisation – Large Enterprise	China	Participant
	Wei Li	China TTL Labs, CATR	Academia / Research	China	Participant
	Rongqiang CAO	Chinese Academy of Science	Academia / Research	China	Participant
	Xuanhao Zeng	Chinese Academy of Science	Academia / Research	China	Participant
Prof.	Yunquan Zhang	Chinese Academy of Science	Academia / Research	China	Participant
	Boqun Cheng	Chinese Academy of Science	Academia / Research	China	Live Demo presenter

Prof.	Zhiwei Xu	Chinese Academy of Science	Academia / Research	China	Speaker
	Haijin Tian	Chinese Academy of Science	Academia / Research	China	Participant
Prof.	Taoying Liu	Chinese Academy of Science	Academia / Research	China	Chair
	Kai Nan	Chinese Academy of Science	Academia / Research	China	Chair
Ms	Fang Qian	Chinese Academy of Science	Academia / Research	China	Participant
Ms	Haiyan Xu	Chinese Academy of Science	Academia / Research	China	Participant
	Honghai Zhang	Chinese Academy of Science	Academia / Research	China	Participant
	Kejun Dong	Chinese Academy of Science	Academia / Research	China	Participant
Dr	Wei Zhou	Chinese Academy of Science	Academia / Research	China	Speaker
Prof.	Zhonghua Lu	Chinese Academy of Science	Academia / Research	China	Participant
Prof.	Jianhu GONG	Chinese Academy of Science	Academia / Research	China	Participant
	Jun Cao	Chinese Academy of Science	Academia / Research	China	Participant
	Guangyan Liu	Chinese Academy of Science	Academia / Research	China	Participant
Dr	Wenyang Yu	Chinese Academy of Science	Academia / Research	China	Participant
	Xiaolin Li	Chinese Academy of Science	Academia / Research	China	Participant
	Xing Hang	Chinese Academy of Science	Academia / Research	China	Participant
	Yi Xie	Chinese Academy of Science	Academia / Research	China	Participant
	Yi Zeng	Chinese Academy of Science	Academia / Research	China	Participant
	Yu Zhang	Chinese Academy of Science	Academia / Research	China	Participant

	Guowei Li	CVIC Software Engineering Co. Ltd	Private Commercial Organisation – Large Enterprise	China	Participant
	Shui Jiang	ECICT	Academia / Research	China	Participant
Mr	Dong Han	eStarCom Inc	Private Commercial Organisation - SME	China	Participant
	Ning Kang	eStarCom Inc	Private Commercial Organisation - SME	China	Participant
	Xintai Wang	eStarCom Inc	Private Commercial Organisation - SME	China	Speaker
	Zhiyi Xiao	GUCAS	Academia / Research	China	Participant

Prof.	Joshua Huang	Hong Kong University	Academia / Research	China	Participant
Dr.	Wenbo Mao	HP Lab China	Private Commercial Organisation – Large Enterprise	China	Speaker
	Jacky Sheng	Huawei Technologies Co.,Ltd (HUW)	Private Commercial Organisation – Large Enterprise	China	Chair
	ShaoHua Xiang	Huawei Technologies Co.,Ltd (HUW)	Private Commercial Organisation – Large Enterprise	China	Participant
	Tieying Wang	Huawei Technologies Co.,Ltd (HUW)	Private Commercial Organisation – Large Enterprise	China	Participant
	Yang Cai	Hydro-Information Centre	Government/Public Administration (non-academia)	China	Participant
	Zy Yu	IAPCM	Academia / Research	China	Participant
Prof.	Hongbing Luo	Institute of Applied Physics	Academia / Research	China	Participant
Dr	Gang Chen	Institute of High Energy Physics	Academia / Research	China	Chair/Speaker
	Xiaofei Yan	Institute of High Energy Physics	Academia / Research	China	Participant
Ms	Fang Liu	Institute of Software	Academia / Research	China	Press Contact
	Lai Shang	Institute of Software	Academia / Research	China	Participant
	Xiaojun Zhang	Intel China Ltd	Private Commercial Organisation – Large Enterprise	China	Participant
	Yibo Dong	Intervision Software Co. Ltd	Private Commercial Organisation - SME	China	Participant
	Zhiwei Wang	Intervision Software Co. Ltd	Private Commercial Organisation - SME	China	Speaker
	Xiaobing Guo	Lenovo Research	Private Commercial Organisation – Large Enterprise	China	Participant
	Yangli Yang	Logistics Command Academy	Academia / Research	China	Participant

	Yang Yang	National Astronomical Observatory	Academia / Research	China	Participant
Professor	Huamin Wang	National University of Defense Technology	Academia / Research	China	Speaker
	Nong Xiao	National University of Defense Technology	Academia / Research	China	Participant
	Yi Han	National University of Defense Technology	Academia / Research	China	Participant
	Yingjie Zhao	National University of Defense Technology	Academia / Research	China	Participant
Dr	Hai Liu	National University of Defense Technology	Academia / Research	China	Participant
	Wei Li	Neusoft Research	Academia / Research	China	Participant
	Lipeng Chen	North China University of Technology	Academia / Research	China	Participant
Mr	RenYi Xiao	NSFC	Government/Public Administration (non-academia)	China	Participant
Dr (PhD)	Huashan Yu	Peking University	Academia / Research	China	Participant
	Jason Qian	Peking University	Academia / Research	China	Participant
	Shuang Guo	Peking University	Academia / Research	China	Participant

	Sijin Qian	Peking University	Academia / Research	China	Chair
	Guangru Li	Peking University	Academia / Research	China	Participant
	Lie Liu	Peking University	Academia / Research	China	Participant
	Yanjing Huang	Peking University	Academia / Research	China	Participant
	Yingjie Han	SAP Labs China	Private Commercial Organisation – Large Enterprise	China	Participant
Prof.	Long Wang	SCCAS	Academia / Research	China	Participant
Dr	Zhong Jin	SCCAS	Academia / Research	China	Participant
	Xiaohong Chen	Shandong University	Academia / Research	China	Participant
	Yi Hu	Shandong University	Academia / Research	China	Participant
Dr	Kungian Yu	Shanghai Institute of Materia Medic	Academia / Research	China	Participant
	Kai Jiang	Shanghai Supercomputer Centre	Government/Public Administration (non-academia)	China	Participant
	Puyong Wang	Shanghai Supercomputer Centre	Government/Public Administration (non-academia)	China	Participant
Dr (PhD)	Gaoyu Zhang	Shanghai University	Academia / Research	China	Participant
	Ling Chen	Shenzhen Institute of Advanced Technology	Academia / Research	China	Participant
Dr.	Dingju Zhu	Shenzhen Institute of Advanced Technology	Academia / Research	China	Participant
	Lv Wei Zhu	TongTech	Private Commercial Organisation – Large Enterprise	China	Participant
	Dongpu Fu	TongTech	Private Commercial Organisation – Large Enterprise	China	Speaker
	He Qing Niu	TongTech	Private Commercial Organisation – Large Enterprise	China	Participant

Mr	Fanfui Fang	Tsinghua university	Academia / Research	China	Participant
Prof.	Junwei Cao	Tsinghua University	Academia / Research	China	Participant
Dr	Kungian Yu	Tsinghua University	Academia / Research	China	Participant
	Dong Wang	Tsinghua University	Academia / Research	China	Participant
Mr	Wangzhen Wang	Tsinghua University	Academia / Research	China	Participant
Dr	Yongwei Wu	Tsinghua University	Academia / Research	China	Participant
Dr	ZhenChun Huang	Tsinghua University	Academia / Research	China	Participant
Prof.	Guanwen Yang	Tsinghua University	Academia / Research	China	Participant
	Zenhe Wang	Tsinghua University	Academia / Research	China	Participant
Doctoral student	Ke Xu	Tsinghua University	Academia / Research	China	Participant
	Shen Wang	Tsinghua University	Academia / Research	China	Participant
	Weiyuan Huang	Tsinghua University	Academia / Research	China	Participant
	Yulai Yuan	Tsinghua University	Academia / Research	China	Participant
Doctoral student	Wen Zhang	Tsinghua University	Academia / Research	China	Participant
Mr	Shiyi Deng	Ufsoft	Private Commercial Organisation – Large Enterprise	China	Participant
Mr	Dong Wei	University of Sci & Tech of China	Academia / Research	China	Participant
	Lingling Hu	University of Sci & Tech of China	Academia / Research	China	Participant
	Xiao Qian Liu	University of Sci & Tech of China	Academia / Research	China	Participant

	JianCang Xie	Xi'an University of Technology	Academia / Research	China	Participant
Prof.	Yongjin Zhang	Xi'an University of Technology	Academia / Research	China	Participant
Mr	HaiXiang Zhao	Xi'an University of Technology	Academia / Research	China	Participant

	Weiguo Wu	xi'an Jiaotong University	Academia / Research	China	Participant
	Xiaohong Jiang	Zhejiang University	Academia / Research	China	Participant
Dr.	Xiaoyan Qiu	Military Logistics Academy	Academia / Research	China	Participant
	Xingyong Luo	N/A	N/A	China	Participant
	Zhang Min	Military Logistics Academy	Academia / Research	China	Participant
	Ran Liu	N/A	N/A	China	Participant
	Chuanjing Cao	Military Logistics Academy	Academia / Research	China	Participant
	Xu Zhang	BUPT	Academia / Research	China	Participant
	Zhiqiang Zhang	N/A	N/A	China	Participant
Prof.	Bohu Li	Academician, Chinese Academy of Engineering; President, Institute of Automation Science and Electron Engineering, Beihang Univ.; President, Chinese Association for System Simulation	Academia / Research	China	VIP participant
Prof.	Jun-Seok Hwang	Seoul National University	Academia / Research	Korea	Speaker