



# Overview of ILDG: International Lattice Data Grid and JLDG: Japan Lattice Data Grid

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## Grid R&D Activities in Lattice QCD

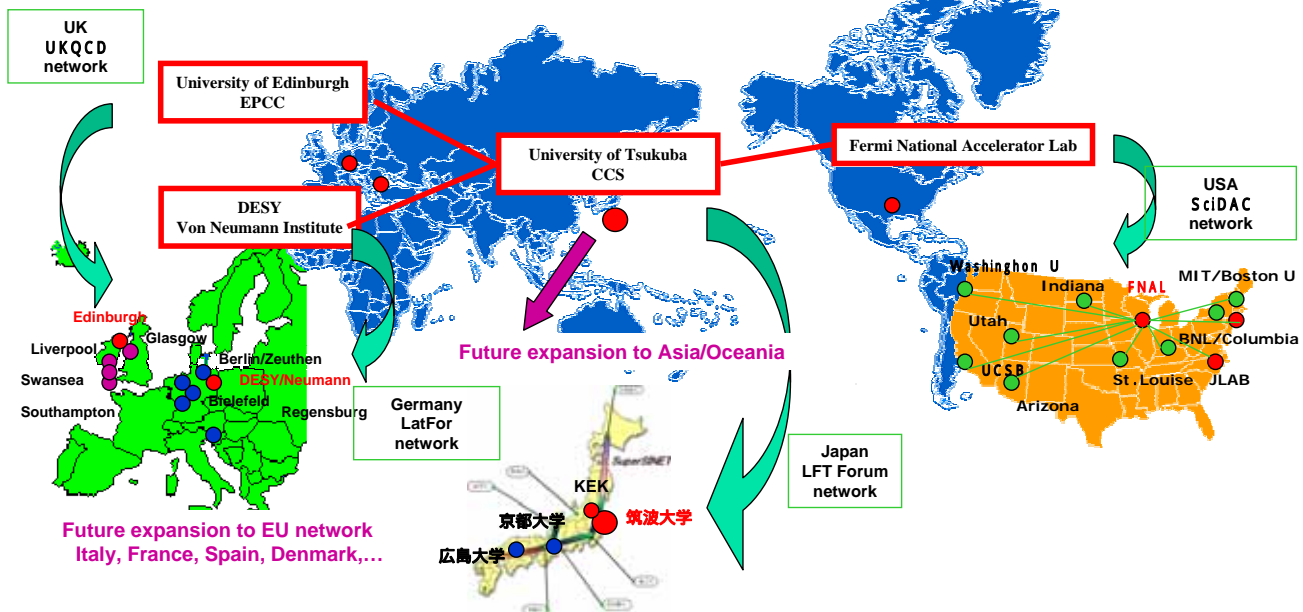
- The ILFTNet (International Lattice Field Theory Network) Project (FY2004 ~ FY2005) aimed to construct a research network among leading institutes in Japan, USA, UK, Germany and other countries in the field of lattice quantum field theories, through promotion of international collaboration, a chain of workshops and seminars, and researcher exchange.
  - The hub institute in Japan was the Center for Computational Sciences, Univ. of Tsukuba
- ILDG is an international project to develop a grid of data grids for sharing lattice QCD configurations world-wide. ILDG is an infrastructure of ILFTNet.
- LQA is a database of QCD configurations maintained by the Center for Computational Sciences (CCS) since Dec. 2003.
- JLDG is a data-grid infrastructure for Lattice QCD (LQCD) community in Japan.

# International Lattice Data Grid Project



JSPS program 2005-2006

- R& D of International Lattice Data Grid (ILDG) and international collaboration in computational particle physics
  - Data sharing among key cites in USA/UK/Germany/Japan etc



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# ILDG Project



- Video Conference twice in a year (since 2002)
  - ILDG 11 will be held at the end of this November.
- Two Working Group
  - Metadata Working Group → Prof. Yoshie's talk
  - Middleware Working Group
- Our Contribution
  - Contribution to the WG (Meta Data, Middleware)
  - Main developer in Japan
  - Host Video conference of ILDG
  - We hosted face-to-face Middleware WG meeting in 2005.
  - Host ILDG interface from Japan to ILDG
  - Development of JLDG: national data Grid
  - Supported by NII CSI (National Institute for Informatics, Cyber Science Infrastructure) Project

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## ■ Objectives

- Define the architecture and components (not development)
- Define the interface of each components

## ■ Members

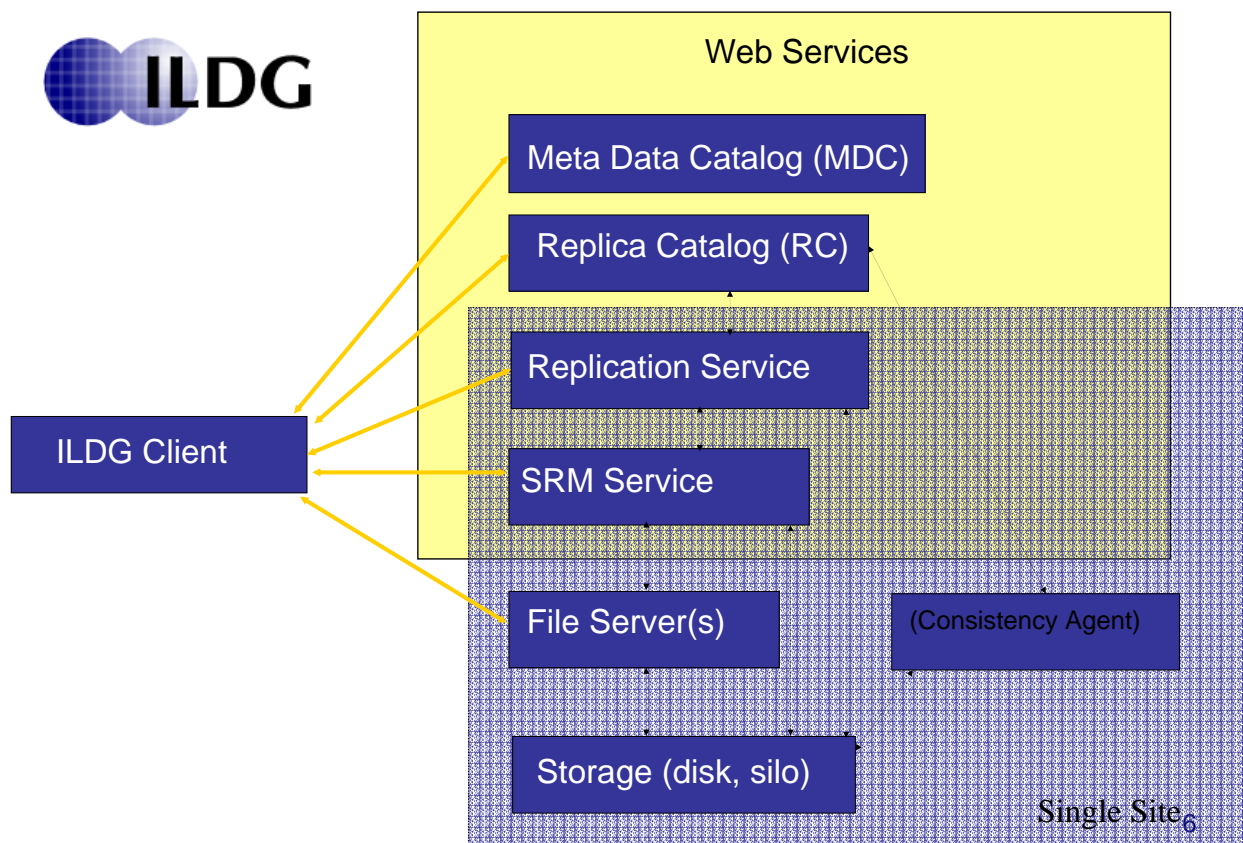
- Bálint Joó(Jlab, USA), G. Beckett (EPCC, UK) , D. Byrne (EPCC, UK), P. Coddington (CSSM, Australia) , P. Dirk (DESY, Germany) , M.Sato (CCS, Convener) , Ishii (CCS) J. Simone (Fermilab, USA), W. Watson (Jlab, USA, Convener)

## ■ Chronology and Main activities

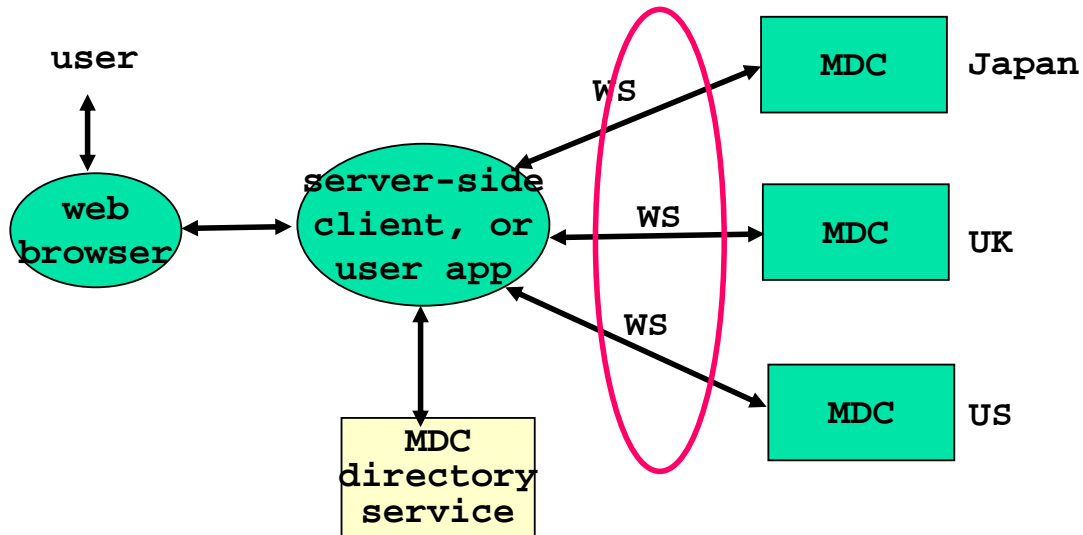
- 2003/01: WG organized
- 2004/10: Interface agreement at F2F Meeting at EPCC
- Monthly Tel conference
- F2F Meeting once in year

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## Review: Data Grid Web Services Architecture



- Clients can access multiple MDC's at different sites
- Directory service tells the locations of MDC's, which may be managed by LDAP



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## Status Report: ILDG Middleware (at Last ILDG10)

- JLDG site: [www.jldg.org](http://www.jldg.org) is in production
  - MDC WS
    - Using “Exist” XML database. We need to update with a new version.
  - RC WS
    - Simple WS : one-to-one mapping from LFN to Transfer URL (http)
    - We plan to replace with a new FC interface.
  - No SRM
  - File transfer
    - httpd for “wget” under simple access control by .htaccess
    - gsiftp file transfer is also available. It checked by Interoperable testing .
    - gridmap-file will be sync'ed automatically with ILDG VOMS (very soon!)
- QCDArchive: Lattice QCD Archive, Japan
  - WS-enabled version of Server-side client
    - MDC WS interface is used for MetaData Search
  - No progress since the last ILDG9

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- Web-service-enabled version of server-side client, QCDArchive

- See <http://jldg-www.ccs.tsukuba.ac.jp/QCDArchive/>

- Two user web interfaces

- Interactive ensemble search
      - specific to our configuration data
    - Raw Xpath Query interface for Ensemble data and Configuration Data

- Listing the matched data

- Generating download scripts

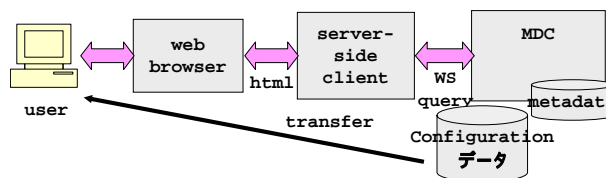
- Download script is supposed to be executed off-line.

- Status

- Need some brush-up on design
    - No actual data is stored yet.

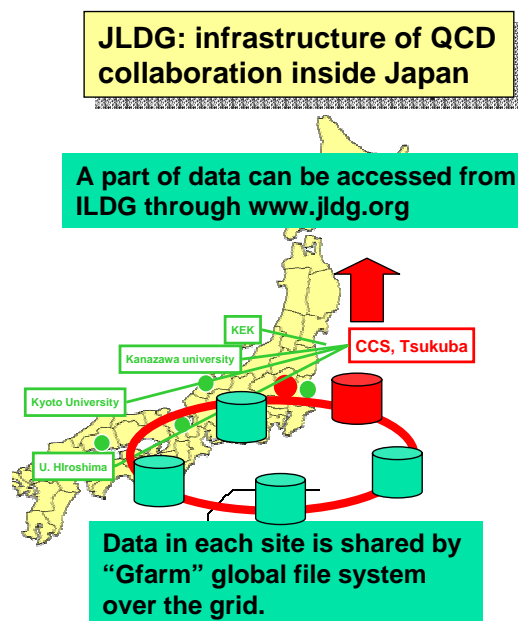
- Plan

- Add the function to switch to other site
    - search over multiple sites



## JLDG: Japan Lattice Data Grid

- New grid infrastructure for LQCD community in Japan
- File Sharing with “GFarm” Global File System
  - <http://datafarm.apgrid.org>
- GSI authentication managed by VOMS
  - Use NII/NAREGI CA
- Access to configurations from ILDG is controlled by registering with metadata
- New domain: [jldg.org](http://jldg.org)
  - A gateway to JLDG : [www.jldg.org](http://www.jldg.org)



# Status: JLDG

- Gfarm servers at 5 Sites have been setup
  - U. Tsukuba (CCS), KEK, Osaka U, Kyoto U, Hiroshima U.
- Local JLDG CA/RA and VOMS are ready (running at Tsukuba)
- Now under testing between sites.

