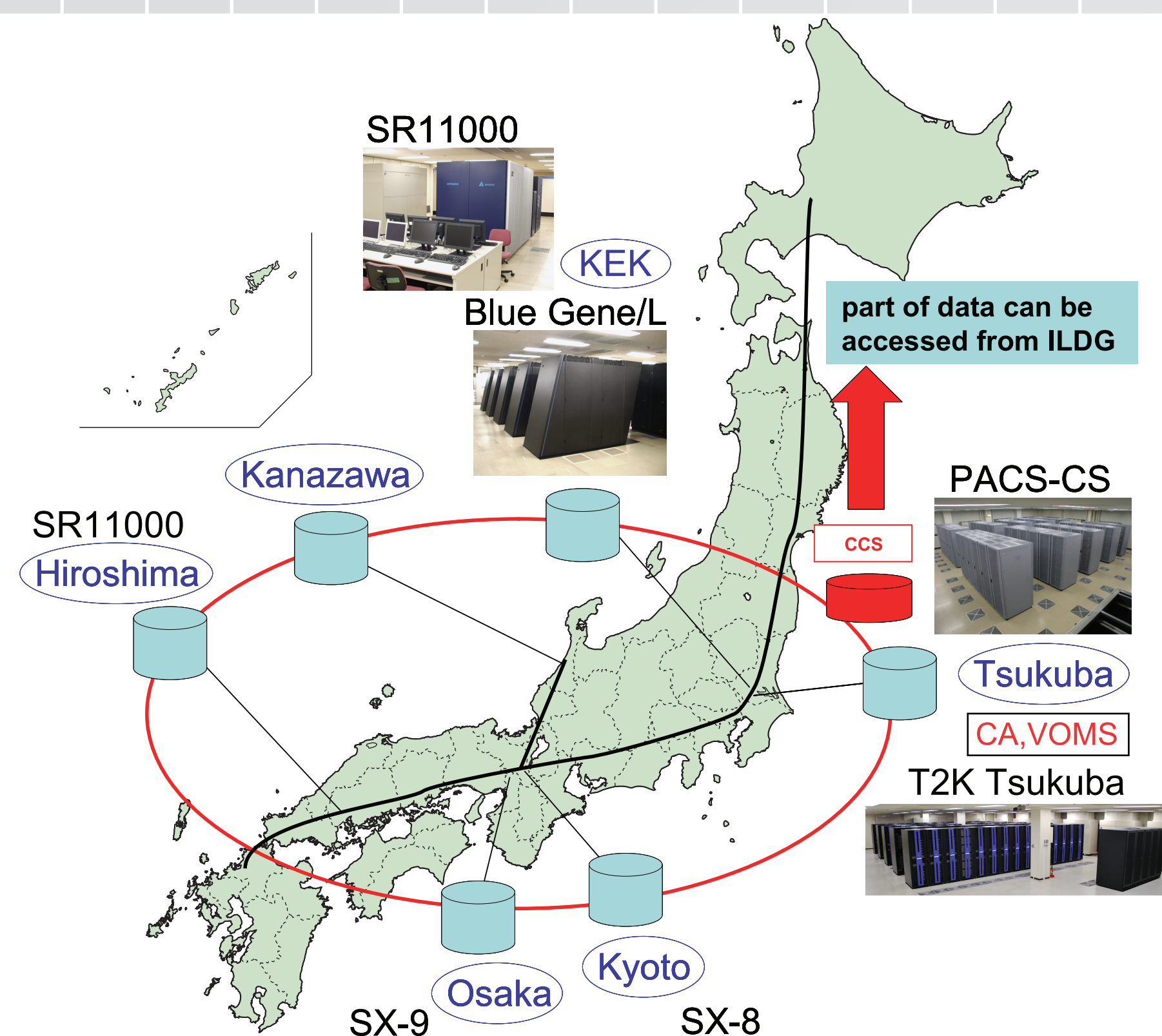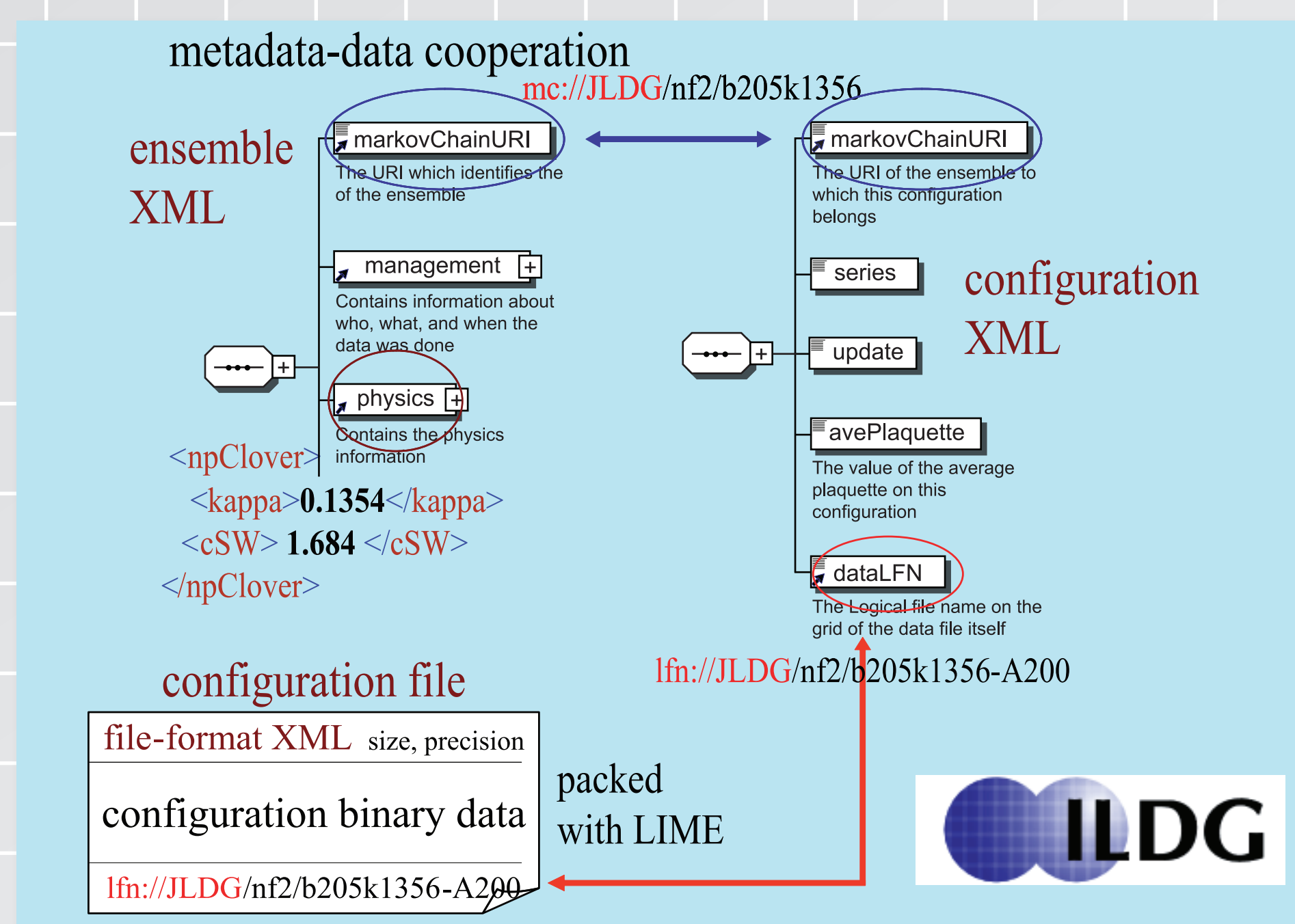**Japan Lattice Data Grid**

JLDG: Japan Lattice Data Grid

JLDG: Japan Lattice Data Grid

JLDG is a data-grid infrastructure for Lattice QCD (LQCD) community in Japan. Several large LQCD collaborations in Japan have been working on QCD simulations using super-computers. Outputs of simulations called "QCD configurations" are valuable, because physicists can study various aspects of QCD using these configurations. JLDG enables the community to share configurations and other data distributed over distant sites. File sharing is realized with Gfarm Grid file system. GSI authentication is managed by VOMS. JLDG utilizes the NII SINET3 L3-VPN, HEPnet-J/sc, as a hardware infrastructure. Part of configurations can be accessed from all over the world through the ILDG interface. Full installation of the system was completed in FY2006.   URL: ***http://www.jldg.org***
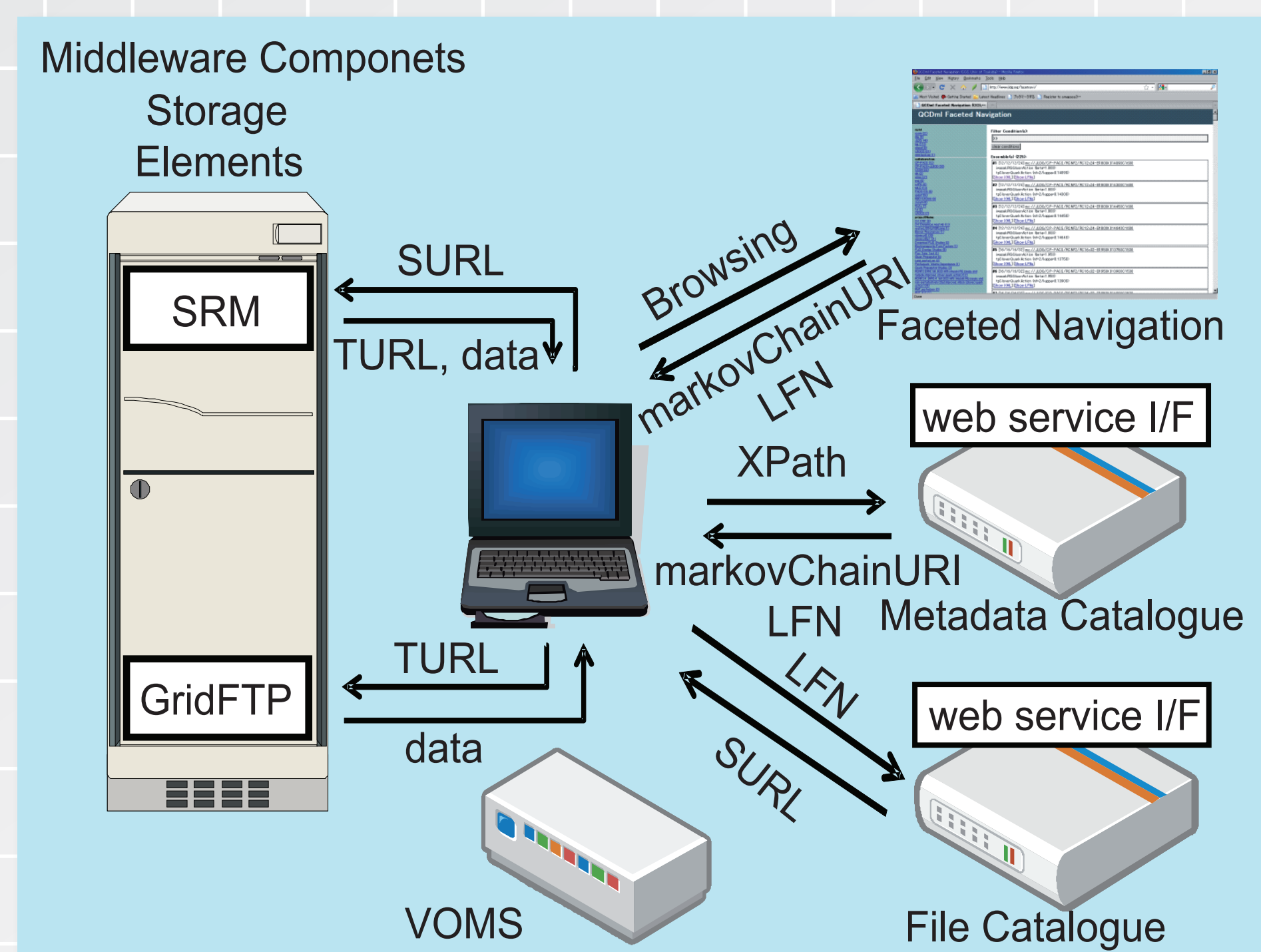
SR11000

KEK

Blue Gene/L

part of data can be accessed from ILDG

ccs

PACS-CS

Kanazawa

SR11000
Hiroshima

Tsukuba

CA,VOMS

T2K Tsukuba

Osaka   Kyoto

SX-9   SX-8

ILDG: International Lattice Data Grid

metadata-data cooperation

mc://JLDG/nf2/b205k1356

ensemble XML

markovChainURI
The URI which identifies the of the ensemble

management
Contains information about who, what, and when the data was done

physics
Contains the physics information

<npClover>
<kappa>**0.1354**</kappa>
<cSW> **1.684** </cSW>
</npClover>

markovChainURI
The URI of the ensemble to which this configuration belongs

series

update

configuration XML

avePlaquette
The value of the average plaquette on this configuration

dataLFN
The Logical file name on the grid of the data file itself

lfn://JLDG/nf2/b205k1356-A200

configuration file

file-format XML size, precision

configuration binary data

lfn://JLDG/nf2/b205k1356-A200

packed with LIME

ILDG

ILDG is an international project to develop a grid of datagrids for sharing lattice QCD configurations world-wide. An XML-based markup language, QCDml, describes metadata for QCD configurations and ensembles (sets of configurations with common physics parameters). Middleware interface among collaborating grids is defined with WSDL. Construction of regional grids was finalized in US, UK, Germany, Australia and Japan. (JLDG works as the ILDG Japan grid.) Interoperability of the regional grids has been achieved for download operations and valuable configurations have already been archived in the grid.

URL: ***http://www.lqcd.org/ildg***

Faceted Navigation Interface for QCDml

Middleware Componets
Storage
Elements

SRM

SURL

TURL, data

Browsing
markovChainURI
LFN

Faceted Navigation

XPath

web service I/F

markovChainURI
LFN

Metadata Catalogue

GridFTP

TURL

data

LFN

SURL

web service I/F

VOMS

File Catalogue

Faceted navigation interface for QCDml has been developed and provided by the Center for Computational Sciences (CCS) since Oct. 2008. The interface allows a user to browse 225 ensembles (as of October 2009), collected from 5 regional grids, by specifying interesting values organized in 12 distinct facets (regional grid, collaboration, project name, date, lattice size, number of flavors, gluon action, quark action, and other related parameters). It can be used, not only for browsing particular ensembles, but also grasping the whole picture of the ensembles presently available in ILDG data grid.

URL: ***http://www.jldg.org/facetnavi/***