FIM-related activities and issues being discussed in Japan

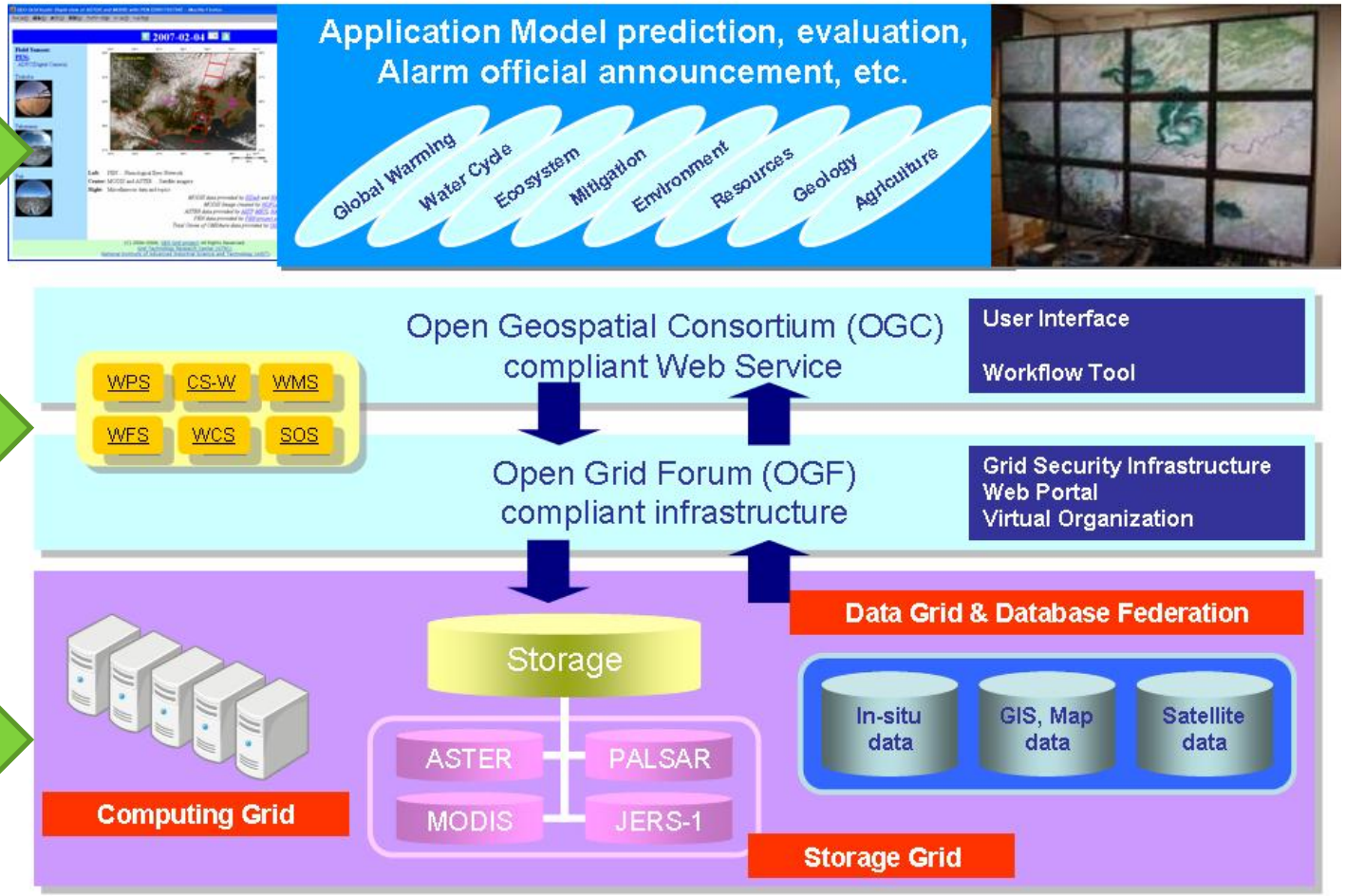
1. GEO Grid
   Yoshio Tanaka (AIST)
2. HPCI, GakuNin
   Eisaku Sakane, Kento Aida (NII)

Global Earth Observation (GEO) Grid

Web2.0 based User Interface

Provide data via OGC Standards

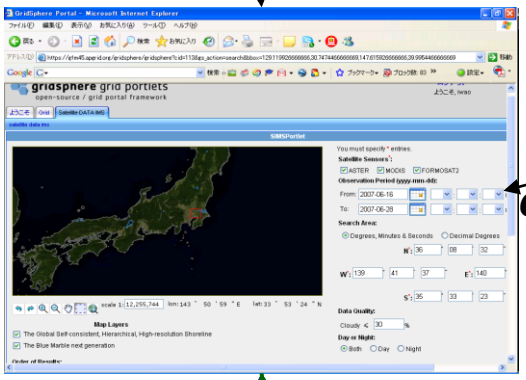
Grid-based Infrastructure



Current Grid-based Implementation of ASTER Data Serv

user

login *username/password*
OpenID
X.509 Certificate



portal server

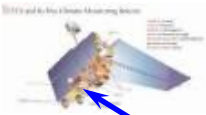
credential

account (GAMA) server

Account DB

VO (VOMS) server

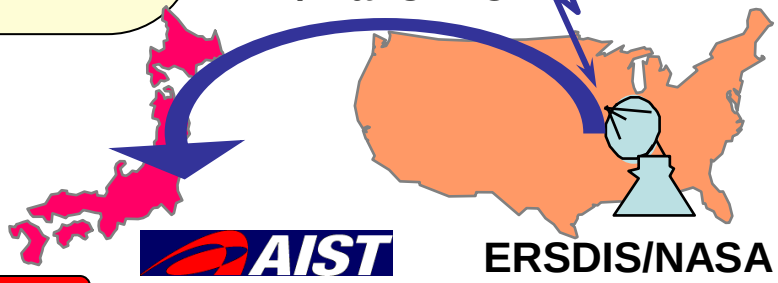
VO DB



Terra/ASTER

TDRS

APAN/TransPAC



AIST

ERSDIS/NASA

GET

query

exec

GSI + VOMS

WFS

WCS

WMS

CSW

GSI + VOMS

OGSA DAI

GSI + VOMS

GRAM

GridFTP

GIS server

map server

catalogue/ metadata server

gateway server

GEO Grid Cluster

GRID DATA FARM

L0 L0 L0 L0

Data

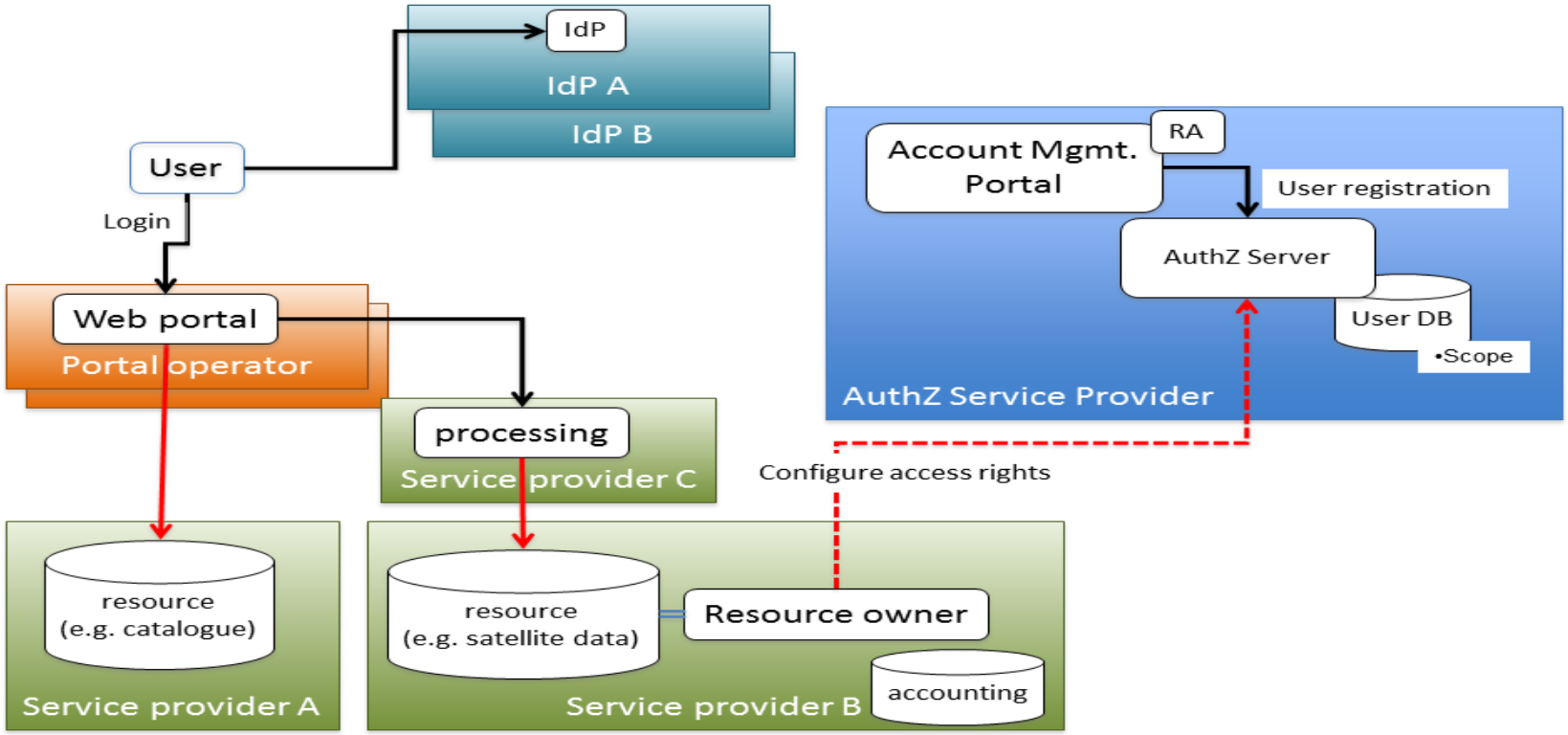
Maps

Meta data

Storage (DEM)

Towards Cloud-based implementation

- GEO Grid is in operation supporting academic users, but there is a strong demand for make easy federation of satellite data for business use.
- Re-designing GEO Grid security
  - GSI does not fit well with Web services and clouds.
  - GSI is still not easy to install/configure, especially at the server side.
- Basic idea is to use OpenID + OAuth2.0 (OpenID Connect)



Issues being discussed related FIM

- LoA of OpenID providers
- Do we need a common guidelines/profiles for both IdP and AuthZ Services as IGTF did?
  - The answer must be yes, but who and how do we do this?
- How do we connect to HPCI (High Performance Computing Infrastructure) which is based on GSI?
  - Technically possible (e.g. SLCS/MICS), but not easy in policy level.
  - What are the issues to be solved?

I believe that these issues are described in the FIM document and look forward to keep in touch.

HPCI in Japan

- High Performance Computing Infrastructure (HPCI)
  - national project promoted by Ministry of Education, Culture, Sports, Science and Technology (MEXT) in Japan
  - distributed computing infrastructure for high performance computing
    - ✓ “K computer”, supercomputers and high performance storage
  - first production level infrastructure for high performance computing in Japan
- Roadmap
  - Mar 2011 basic design
    - ✓ network, authentication, user management, shared storage, testbed for advanced software
  - Apr – Dec 2011 detailed design
  - Jan – Aug 2012 test operation
  - Sep 2012 – production level operation

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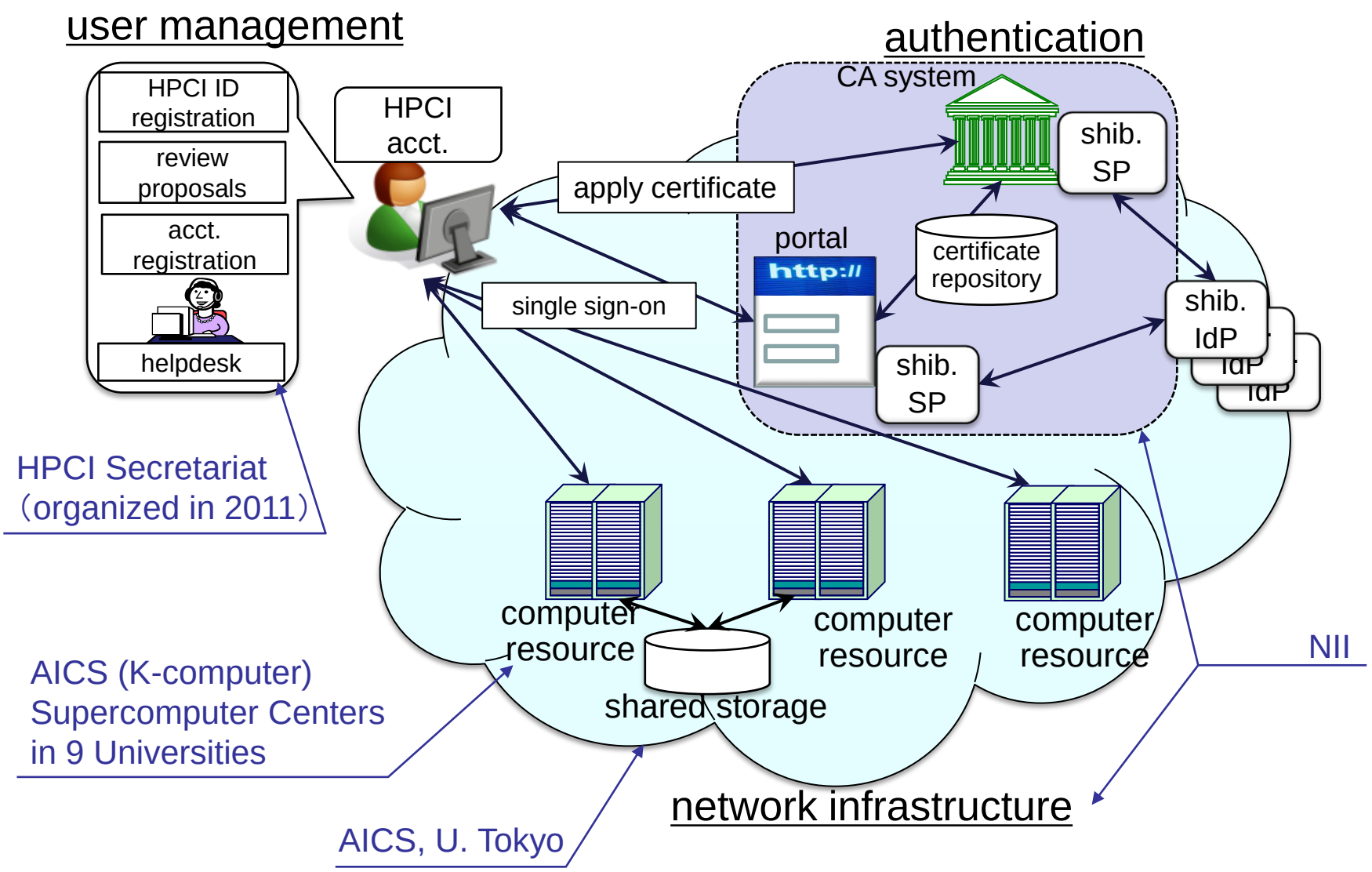
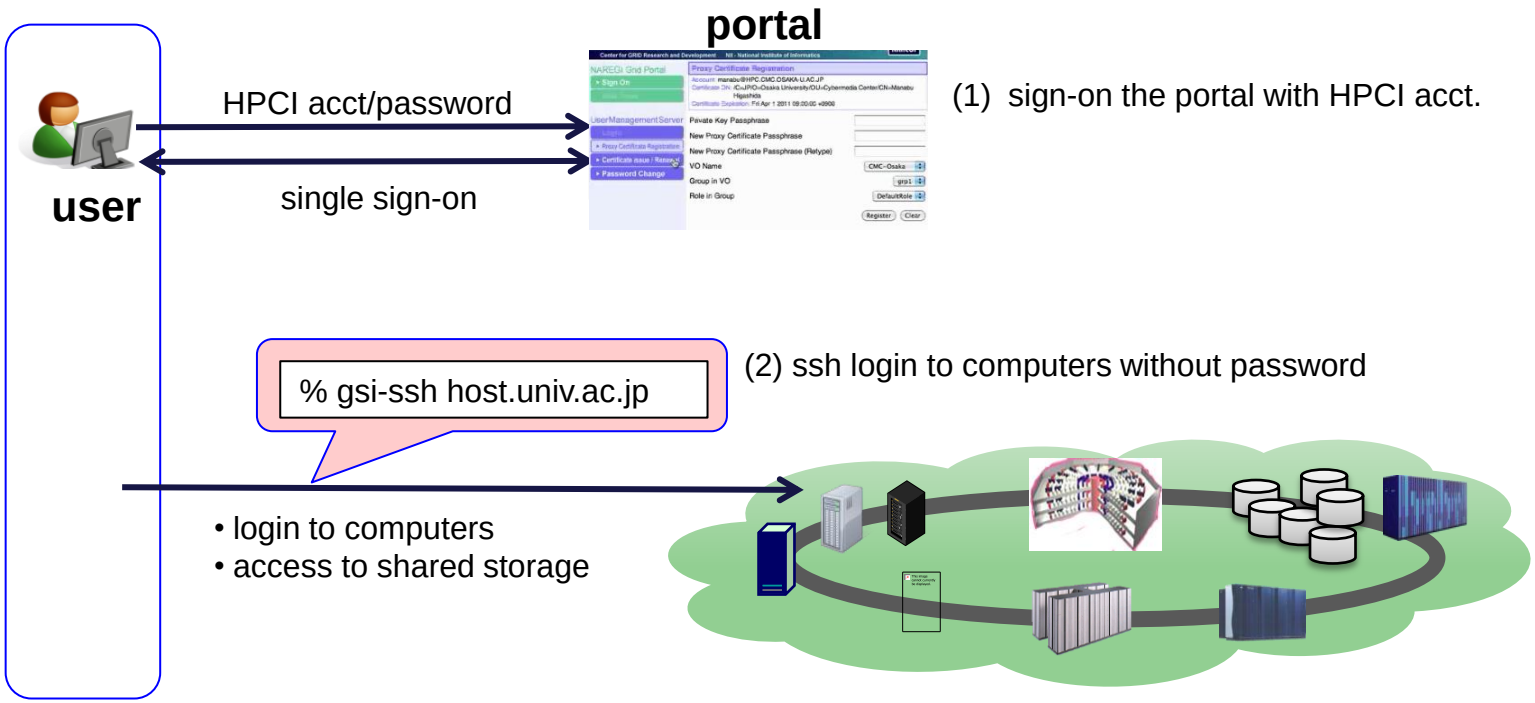
HPCI Overview (at Sep. 2012)



Authentication

- The goal is enabling single sign-on computer resources and shared storage in HPCI.
- survey of existing software technologies and operation of grid infrastructures
- account management
  - centralized or distributed?



Shibboleth + GSI

- Shibboleth for account management of HPCI
  - HPCI account = account to sign-on HPCI
  - federation of HPCI accounts managed in distributed way using Shibboleth
    - ✓ Supercomputer centers play the role of IdP.
    - ✓ NII plays the role of SP that provides a certificate issuance.
    - ✓ A user has a HPCI account in one supercomputer center.
- Grid Security Infrastructure (GSI) for single sign-on
  - de facto in grid communities
  - enabling single sign-on using PKI
  - creating proxy certificate and delegation
  - mapping “Distinguished Name (DN)” in a client certificate and a local account name (LN) in supercomputer centers

学認 GakuNin

- Academic Access Management Federation in Japan
- A federation for academic e-resources
  - universities who are users of academic e-resources
  - organizations like publishers, who are providers of such e-resources
    - ✓ E Journal
    - ✓ Issuance of certificate, e.g., server certificate
    - ✓ Issuance of account, e.g., wireless LAN
    - ✓ e-Learning
    - ✓ On-campus system
- This federation is realized by Shibboleth.
  - 35 IdPs and about 60 SPs in production level
  - about 60 IdPs in test

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Issues

- Federation between GakuNin and HPCI
  - Can users of HPCI access academic services provided in Gakunin?
    - ✓ HPCI users are not only academic but also industrial.
  - Some users of supercomputer may have two IDs for on-campus system and supercomputer.
    - ✓ Currently, each ID is managed independently because a supercomputer center in a university provides resources to not only users belonging to same university.
    - ✓ Should these be unified? Can these be unified?
- Credential translation between GeoGrid and HPCI
  - 9 supercomputers & NII: Shibboleth + GSI
  - GeoGrid: OpenID connect
    - ✓ We plan to evaluate a translation service provided by GakuNin, which translates Shibboleth credential to OpenID connect credential.