Authentication and Authorisation in the Cultural Heritage community (the DCH-RP point of view)

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Outline

- Introduction and driving considerations
- The DCH-RP AAI Survey
- The DCH-RP e-Culture Science Gateway
- Summary and conclusions
Research networks at «global» scale
The “Global” Grid

- TeraGrid
- XSEDE
- OSG
- DEISA
- E-GRID
- KnowARC
- BalticGrid
- EUMedGrid
- EUGrid
- EUChinaGrid
- NAREGI
- CNGrid
- EUIndiaGrid
- EUAsiaGrid
- HP/UNESCO «Brain Gain»
- e14Africa
- e4Africa
- NKN & Garuda
- SAGrid & SANREN
- EELA
- GISELA
- European Commission co-funded projects
- Projects with other funding

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e-Science

Virtual Research Communities

e-Infrastructure

Applications

Data

Instruments
Why e-Infrastructures also for Arts and Humanities?

- High performance/throughput computing systems:
  - Large scale, computationally intensive, problems can be tackled, e.g. “ab initio” sound creation, document/image digital restoration, etc.;
- High performance storage systems:
  - Geographically distributed replicas of files
    - Fault-tolerant digital preservation;
- Simplified authentication systems:
  - Single Sign-On (SSO); support of Identity Federations
- Fine-grained authorization systems:
  - Allow to precisely define “who”:
    - Individual user(s), group(s), organization(s), the whole world;
  - And “what”:
    - Read/edit/delete data and metadata;
    - Search, browse;
    - Creation of new repositories;
    - Role assignments, etc.
The TERENA AAA Study
(Objectives)

The goal has been broken down into two objectives:

1. A collection of users’ access requirements coming from different communities
2. A gap analysis of the existing AAIs used in the realm of research and education, the use-cases they support and the associated challenges
The TERENA AAA Study (Findings)

Nearly half of researchers use more than one credential, but a large majority would prefer to access all resources using their institutional credentials.

Researchers primarily use their institutional credentials for authentication (Figure 2.3), although a not insignificant number (19%), use their social network account credentials to access scientific information.

Figure 2.3: Credentials used by researchers

Figure 2.4: Number of credentials used by researchers
Identity Federations in the World (https://refeds.org)

1,500 Institutions
2,100 Services
>17 million people worldwide

Pilot  Production
The eduGAIN inter-federation (www.edugain.org)
# The TERENA AAA Study (Recommendations)

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Action Required</th>
<th>Main Stakeholder(s)</th>
<th>Area</th>
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<tbody>
<tr>
<td>Enhance existing AA infrastructures to address the demands of research communities for accessing different types of services in a manageable and secure way.</td>
<td>AAA support for mobile access; Support for non-Web browser applications; Develop security token translation services to enable inter-operability of different AAIs; Provide guest IdPs for users that cannot rely on an institutional IdP; Allow for effective resource usage accounting for distributed and heterogeneous environments; Enable the uptake and use of persistent identifiers within AAIs; Support social network identities in combination with institutional identities to address specific use-cases for the SDI.</td>
<td>National Identity Federations, eduGAIN, Research collaborations (i.e., big scientific projects)</td>
<td>Technical</td>
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DCH-RP AAI Survey (www.dch-rp.eu)

“Digital Cultural Heritage Roadmap for Preservation” (DCH-RP) is a coordination action supported by the European Commission under the e-Infrastructure Capacities Programme of Seventh Framework Programme for Research (FP7)

A survey about AAI has been started both within and outside the project community

- 20 organisations already filled the survey
  - Mainly research and cultural organisations
DCH-RP AAI Survey
(Current findings)

Are you aware of federated access or of Identity Federations?

- Yes: 60%
- No: 40%

Is your institution part of a national Identity Federation?

- I don't know: 15%
- No: 10%
- Yes: 75%
DCH-RP AAI Survey
(Current findings)

Are you aware that in many European countries Identity Federations are operated by the NRENs?

- Yes: 45%
- No: 55%

Do you think your users would benefit if your service would be part of an existing Identity Federation?

- No: 5%
- Yes: 20%
- Possibly but not necessarily: 5%
- I don't know: 5%
- Maybe. on the other side, many users could not appreciate auth: 5%
- Not applicable: 60%
DCH-RP AAI Survey
(Current findings)

Do you see any problems if users, in order to access to your service, are authenticated by a "catch-all" Identity Provider?

- Yes
- No
- I don't see any problems, but for sure others in my organization will.
- I don't know
- Our users need to be authenticated by us
- Possible issue related to spred of personal data
- Not applicable

Would you like to get support to create an Identity Provider to manage users accounts for your organization?

- No
- Yes
- I don't know
- Not applicable

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The GrIDP “catch-all” federation
(http://gridp.garr.it)
The Open and Social IdP’s
The DCH-RP e-Culture Science Gateway
(http://ecsg.dch-rp-eu)
eCSG Access Workflow – First Authentication

1. sign in

2. authN

Registration to IDPOPEN GARR
eCSG Access Workflow – First Authorisation

1. sign in
2. authN

Welcome to the DCH-RP e-Culture Science Gateway

Dear user, you have been successfully authenticated by your Identity Provider to access this service but, in order to use it, you have to complete and submit the authorisation form you find below.

Authorisation Request

Please, enter your data:

- Title
- Country
- Name
- Organisation
- Surname (or Family name)
- Address
- Barons
- Skype Contact
- Telephone

E-mail: <br>

If you are already a member of an identity federation, please specify the "same" email address you are registered with in the Federation.

A comma separated list of email to associate with this account:

Send | Reset

A user registry is also available for registration to the eCSG.

Developed and maintained by OpenLDAP and INFN.
The e-CSG Architecture

DCH-RP e-CSG

Calls gLibrary REST API through an API Server Gateway

Authorization service

API Gateway

Authentication service

glibrary.ct.infn.it

Metadata Service

Local storage

Grid storage (EGI)

Cloud Storage (EGI FedCloud ? EU-DAT ?)

User Tracking DB

eToken service

REST API

Science Gateway

LIFERAY

DCH

DIGITAL CULTURAL HERITAGE ROADMAP FOR PRESERVATION

Digital Cultural Heritage

INFN

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gLibrary is a framework developed by INFN that provides a simple yet powerful system to store, organize, search and retrieve “digital assets” in distributed repositories built on grid/cloud/local storage infrastructures
- hides the underlying technical details to the users

“digital asset”:
- digital object + corresponding metadata
The DCH-RP Proofs of Concept
(http://ecsg.dch-rp-eu)
The BELSPO PoC
The ICCU PoC
The ICCU PoC
The DCH-RP eCSG Mobile

- Native Android App
- Uses **gLibrary** framework:
  - Retrieves digital assets metadata “on the move”
  - Seamlessly access in mobility several kinds of storages where digital contents are stored
- Available on Google Play at:
eCSG Mobile in action

Welcome to the DCH-RP e-Culture Science Gateway Mobile

This app allows users to run on a mobile appliance the scientific applications contained in the Science Gateway of the DCH-RP Project.

For more information on the DCH-RP e-Culture Science Gateway, visit

Don't show welcome page again

Welcome to the DCH-RP e-Culture Science Gateway Mobile

The access to the DCP-RP e-Culture Science Gateway requires federated credentials issued by an Identity Provider. If the organisation you belong to has an Identity Provider registered in an official Identity Federation, click on Sign In button below and select your federation and provider.

Otherwise, you can get federated credentials registering to the open Identity Provider which belongs to the Gr1DP federation.

Don't show welcome page again
eCSG Mobile in action

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eCSG Mobile in action
eCSG Mobile in action
eCSG Mobile in action

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Summary and conclusions

- The DCH-RP e-Culture Science Gateway is a major step forward towards the uptake of Grid technology by the DCH community.
- The adopted Science Gateway Framework, supporting Identity Federations, Social Networks and mobile access, changes the way e-Infrastructures can be used, especially by non-IT experts.
- The adoption of standards is a concrete investment towards sustainability.
Thank you!

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