

Update on Scientific Collaborative Tools

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Scientific Collaborative Tools Help to Answer These Key Questions

- *How many institutes are part of the collaboration?*
- *Who is the current spokesperson?*
- *Who led the XX Physics group in 2027?*
- *What roles did Institute A played in the 2031 experiment operations?*
- *How many submissions were made to Quark Matter in 2026?*
- *What is the process for publishing a paper under the collaboration's name?*
- *Which papers are currently in the publication queue?*

Every large international scientific collaboration deals with these types of questions

What are collaborative tools

Software designed to help individuals and teams work together more effectively.

Facilitate communication, coordination, and cooperation among team members, regardless of physical location.

Scientific collaborative tools are essential for international research.

Challenges Associated to Collaborative Tools

Technical & Integration Issues: Compatibility between software can make integrating of various tools into a seamless workflow difficult.

Adoption Resistance: Users may resist new tools due to familiarity with 'old' systems, requiring extra communication to overcome this barrier.

Communication & Cultural Barriers: Differences in language, communication styles, and work culture can lead to misunderstandings, inefficiencies, and friction.

Collaborative Tool for International Scientific Collaboration

Glance, Developed at CERN for the ATLAS experiment, it is the only tool currently designed for large-scale international scientific collaboration.

- Adopted by other CERN experiments for some functionalities.

Limitations:

- Deeply integrated with CERN's infrastructure, making it unsuitable for direct use at BNL.

Chosen Direction:

- Develop integrated tools based on BNL's expertise and existing software.
- Insights from the Glance team will guide the development of **CRISP**, a more adaptable tool tailored to ePIC requirements.

CRISP

Collaborative Research Information Sharing Platform

Architecture of CRISP

A modular set of tools accessible through Federated Identity mechanisms

Authorization provided by COmanage

Digital Directory: Contains information about Institutions, Members, Events, Documents, Groups, Tasks and their relations

Digital Repository: Store and preserve documents (internal and public).

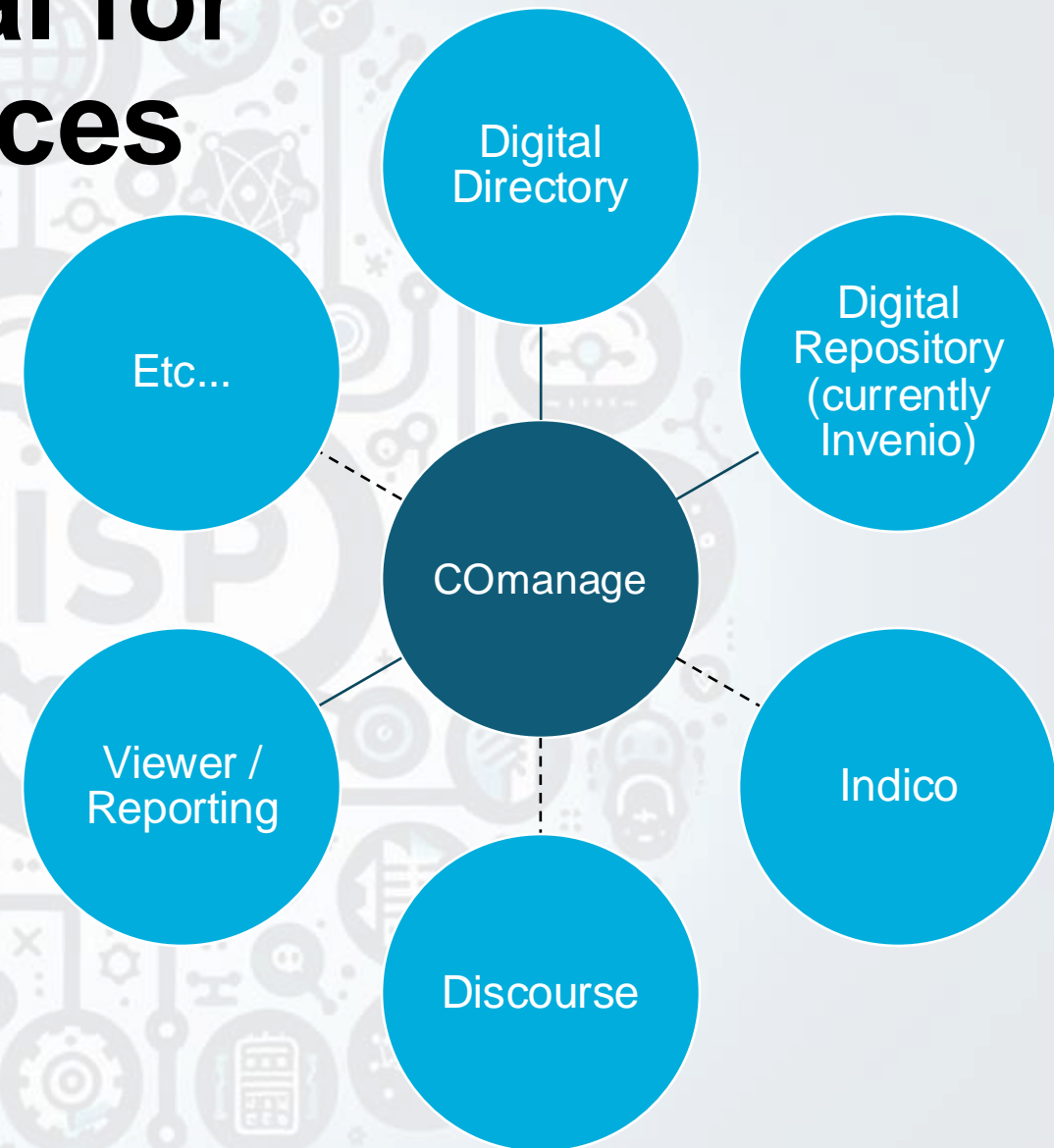
Viewer: Present various views of the system:

- Pages for individuals (history, ...)
- Pages for institutions (members, history, contributions)
- Pages for Publications (publication process and progress)

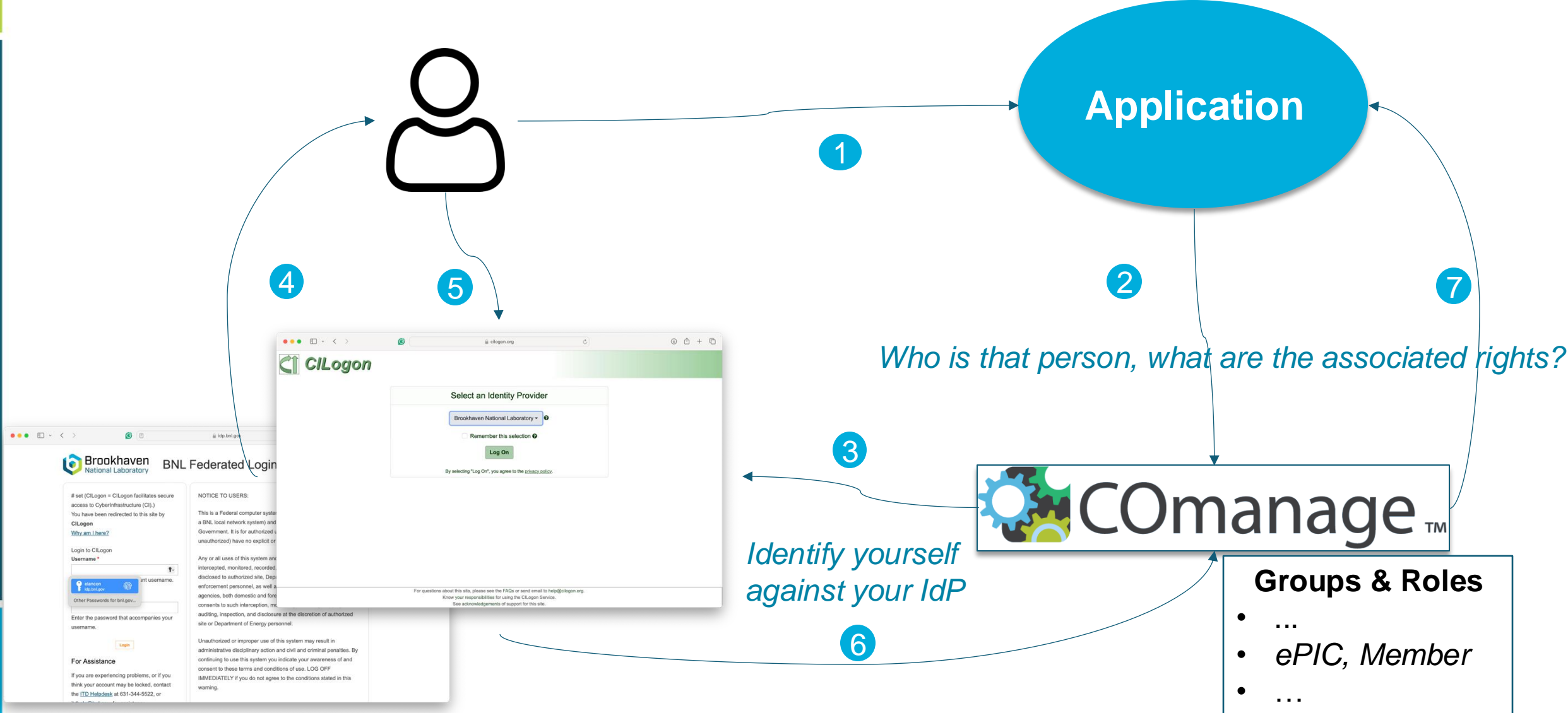
Possibly **connected** to other **existing** tools (for example: Indico, Discourse, ...)

Comanage is central for accessing the services

- The Digital directory defines groups and roles that are synchronized with Comanage
- Which is used to manage authorization to access services (like e-groups at CERN)
- Groups are mapped onto Invenio communities for example

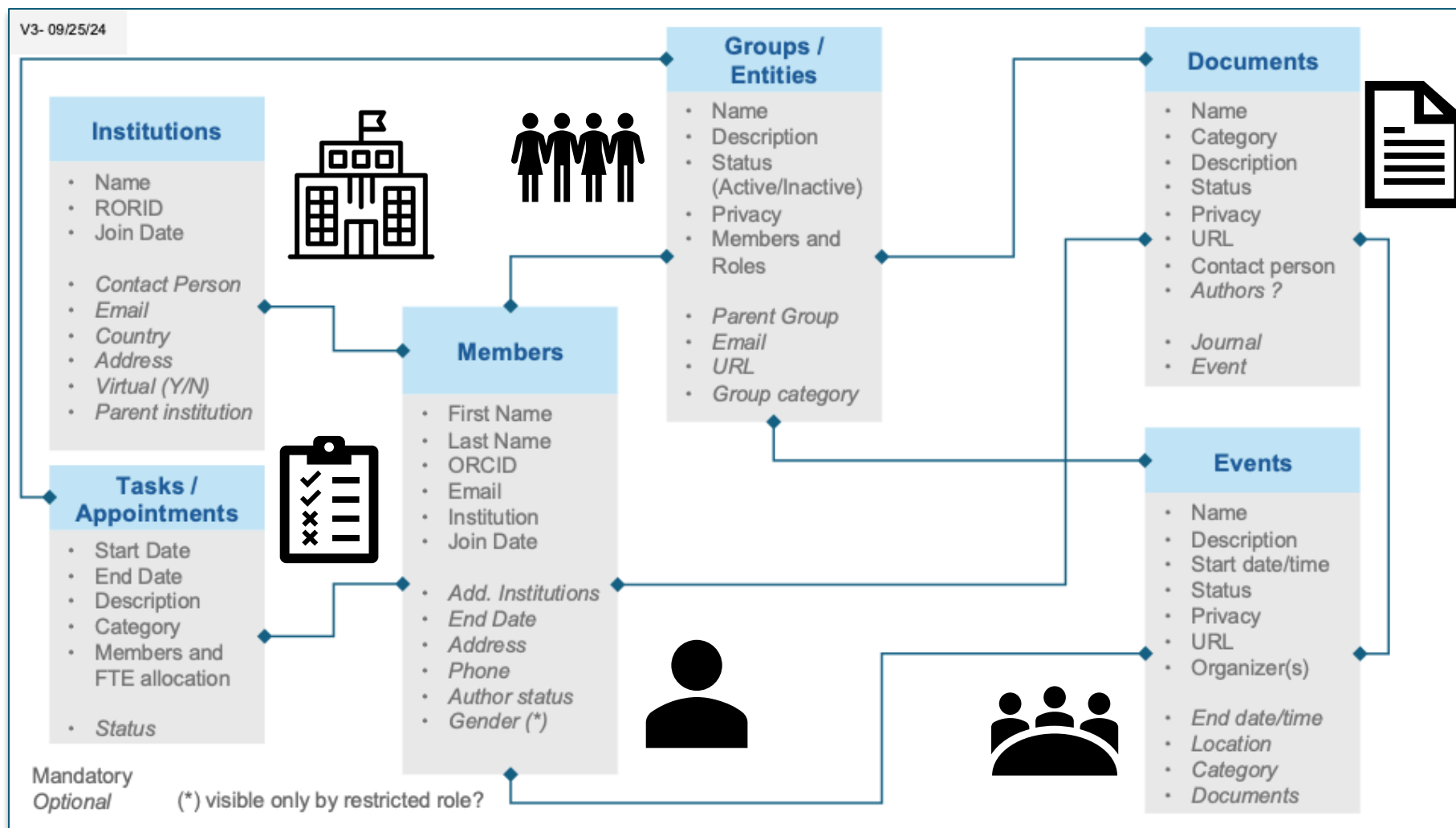


Typical user workflow



The Digital Directory - I

Repository of global information relevant to the collaboration



The Digital Directory - II

History is logged

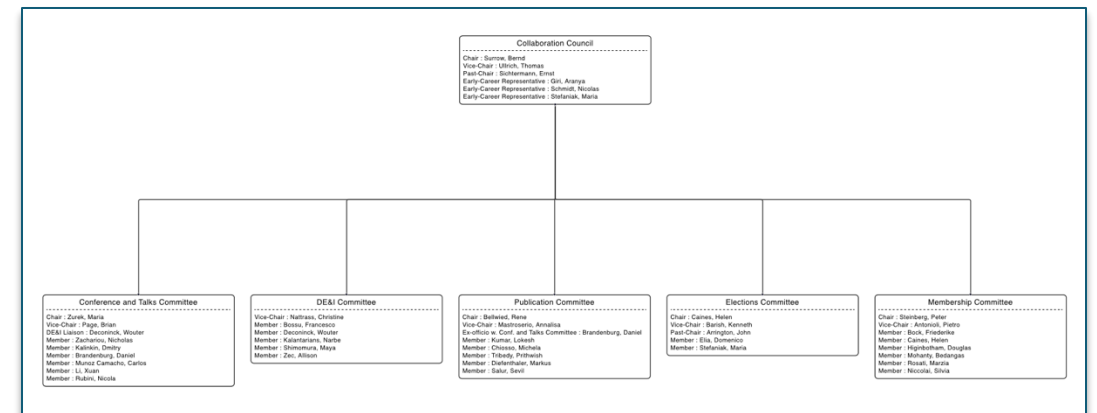
Rely on ORCID for member disambiguate (anyone can get one in 5')

Institutions:

- Defined by their ROR ID
- Can be nested or virtual

Groups:

- Hierarchical layout
- With various roles for members



The current prototype fulfills [ePIC collaboration requirements](#)

CManage

Groups and roles synchronized from the Digital Directory
Defined into '*igroups*' that are used by other applications

- Work in collaboration with JLAB

Currently interfaced with Invenio

- Project with ITD to interface with BNL's Indico

Phonebook group

Link to Invenio

The screenshot shows the 'ePIC COLLABORATION' web interface. The main content area displays the details for the 'Group: DE&I Committee'. The interface includes a sidebar with navigation options like STATISTICS, REPRESENTATIVES, WORLD MAP, AUTHOR LISTS, INSTITUTIONS, MEMBERS, GROUPS, and DOCUMENTS. The group details section includes fields for PARENT GROUP, NAME, DESCRIPTION, EMAIL, URL, INVENIO, and PRIVACY. Below this is a 'Members' table listing individuals with their roles, names, emails, and institutions.

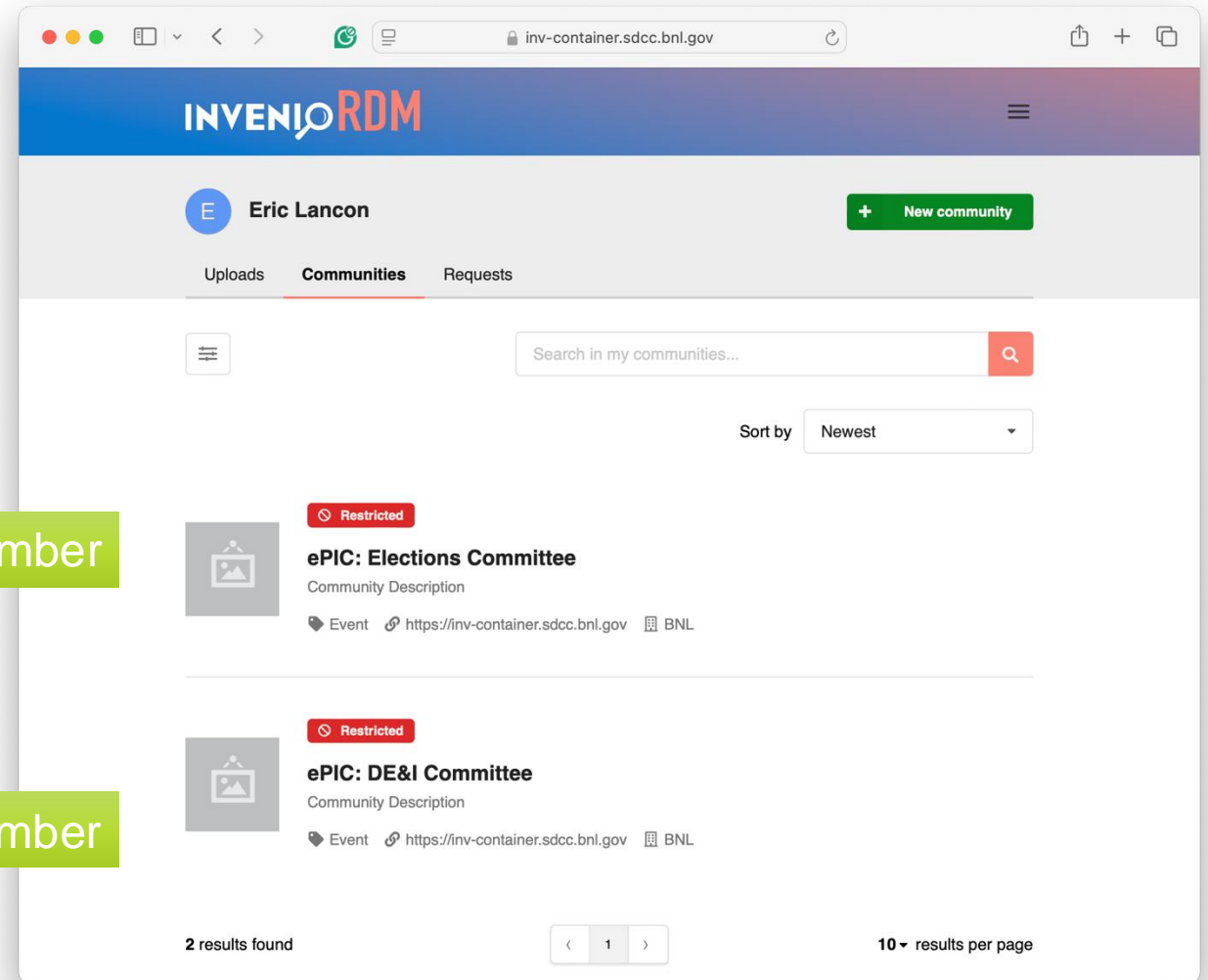
ROLE	NAME	EMAIL	INSTITUTION
Chair	Megan Connors	meganeconnors@gmail.com	Georgia State University
Vice-Chair	Christine Natrass	christine.natrass@utk.edu	University of Tennessee, Knoxville
Member	Francesco Bossu	francesco.bossu@cea.fr	CEA-Saclay
Member	Wouter Deconinck		University of Manitoba
Member	Narbe Kalantarians	nkalantarians@vuu.edu	Virginia Union University
Member	Eric Lancon - Test	elancon@bnl.gov	Brookhaven National Laboratory
Member	Iris Ponce	iris.ponce@yale.edu	Yale University

Comanage groups

The screenshot shows a web browser window with the URL `comanage.sdcc.bnl.gov`. The page header includes the SDCC logo and the CManage logo. The breadcrumb trail is `Home > SDCC > CO Person > Manage Group Memberships`. The main heading is `Manage Eric Lancon Group Memberships`. Below the heading is a filter section with a search box labeled "Filter" and two active filter buttons: `Member` and `Owner`. A `CLEAR FILTERS` link is also present. The main content is a table with the following columns: `Name`, `Description`, `Open`, `Status`, and `Actions`. Three rows are visible, each with a green callout box highlighting a role:

Name	Description	Open	Status	Actions
<code>invenio-epic-de_i_committee-reader</code>	Members of invenio-epic-de_i_committee-reader			<input type="checkbox"/> Owner
<code>invenio-epic-elections_committee-reader</code>	Members of invenio-epic-elections_committee-reader			<input type="checkbox"/> Owner
<code>invenio-epic-members-reader</code>	Members of invenio-epic-members-reader			<input type="checkbox"/> Owner

Invenio Communities

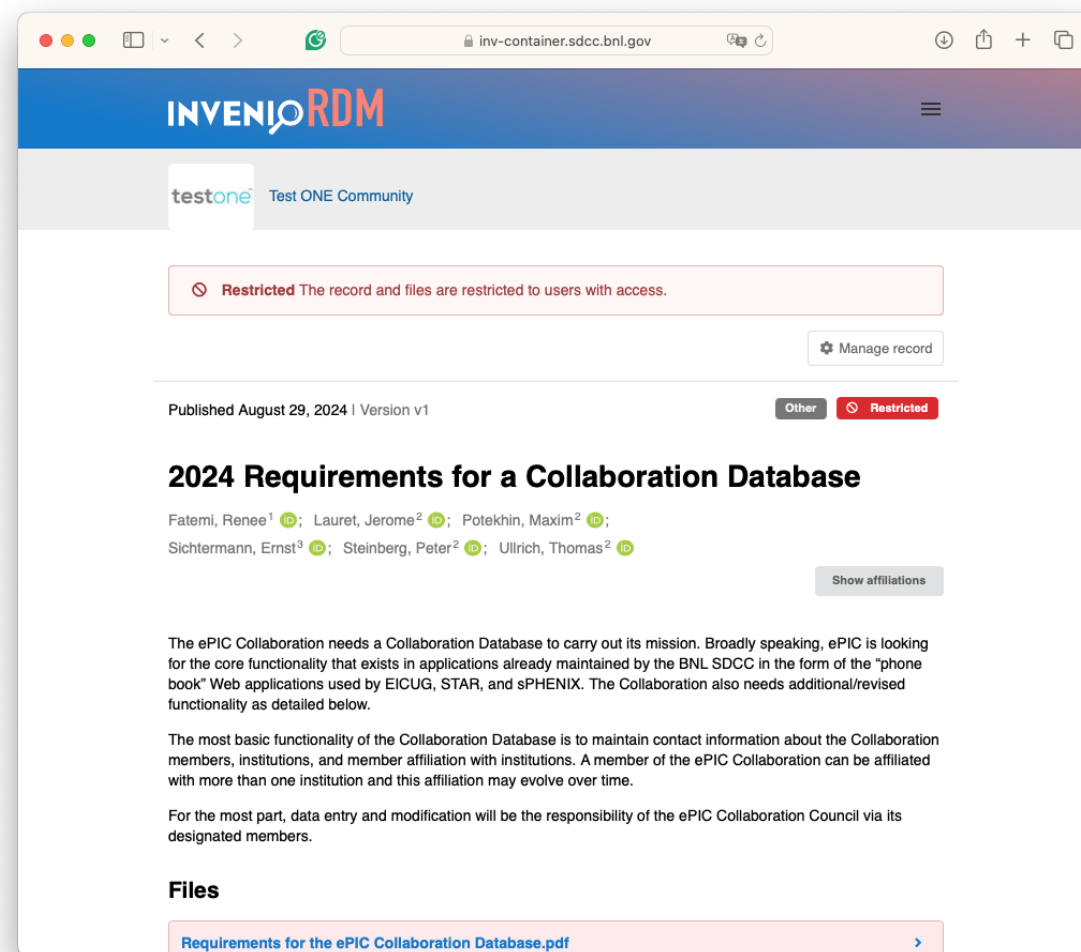


DE&I group member

Generic ePIC member

Digital Repository

- Based on Invenio v12
- Federated Identity is enabled
- Keywords and DOI are enabled
- Invenio communities map on Directory's groups
- Authorization through CManage groups and roles.
Currently:
 - Reader: read and comment
 - Manager: can also manage records



Future works

Implementation of **Viewer**

- Display individual member roles and collaboration history.
- Show institutional contributions to collaboration.
- Track tasks and appointments

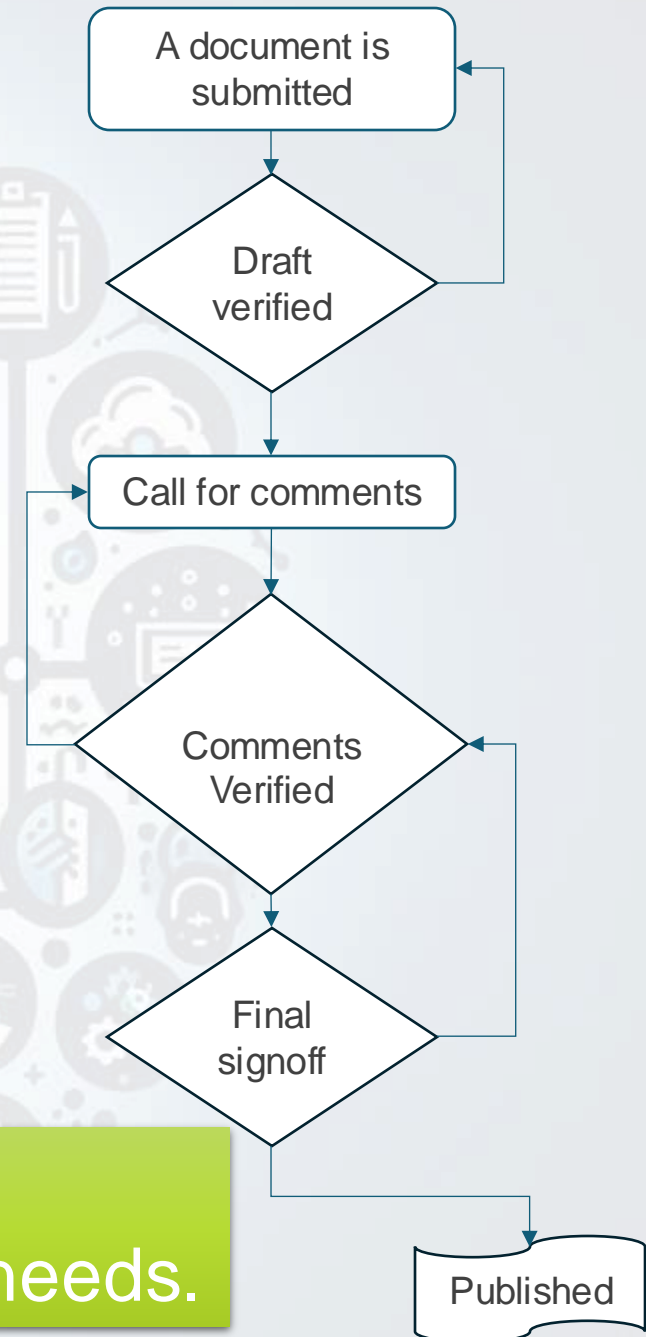
Implement basic document workflows

Prototyping of Digital Repository with various use cases

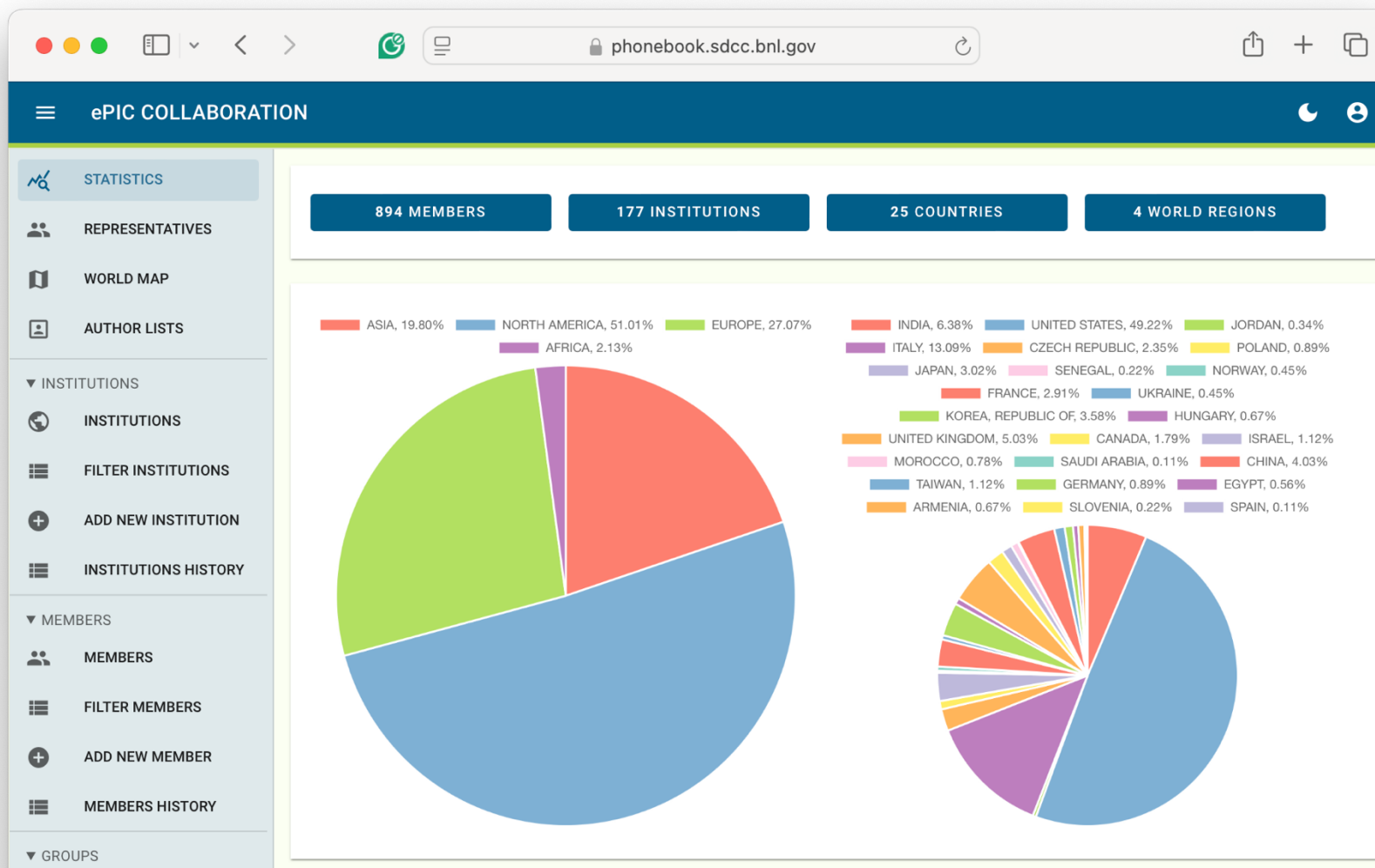
Connection to Indico

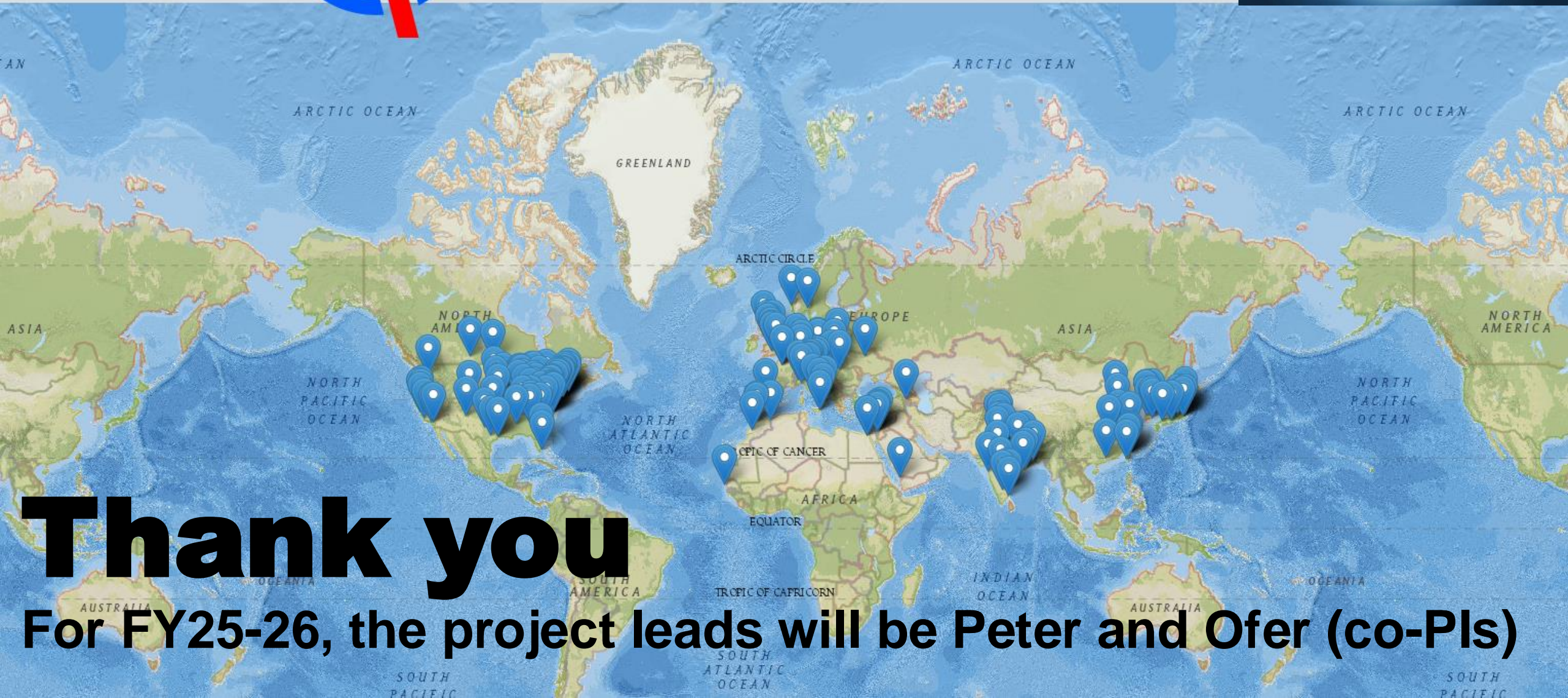
Keywords

Simplicity, user-friendliness, and meeting users needs.



ePIC statistics





Thank you
For FY25-26, the project leads will be Peter and Ofer (co-PIs)



Group attributes

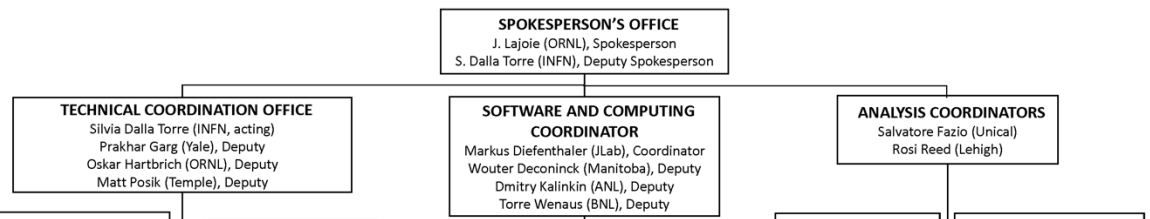
- Parent (optional)
- Name
- Description
- Sub-Category (optional)
- Email
- URL
- Status (active/inactive)
- Privacy

The screenshot displays the 'ePIC COLLABORATION' web application. The main content area is titled 'Edit Group: Conference and Talks Committee'. The form includes the following fields and options:

- PARENT GROUP:** Collaboration Council
- GROUP NAME*:** Conference and Talks Committee
- GROUP DESCRIPTION*:** The Conference and Talk Committee (CTC) is responsible for the oversight and management of all oral and poster presentations given at scientific conferences on behalf of the Collaboration. This includes the selection of presenters, with
- GROUP CATEGORY:** Collaboration Committees
- GROUP EMAIL:** epic-ctc-l@lists.bnl.gov
- GROUP URL:** http://www.test.gov/
- GROUP STATUS*:** ACTIVE
- GROUP PRIVACY*:** PUBLIC GROUP

An 'UPDATE GROUP' button is located at the bottom right of the form. The left sidebar contains navigation menus for STATISTICS, REPRESENTATIVES, WORLD MAP, AUTHOR LISTS, INSTITUTIONS, MEMBERS, GROUPS, DOCUMENTS, and EVENTS.

Example: Coordination offices



phonebook.sdcc.bnl.gov

ePIC COLLABORATION

STATISTICS
REPRESENTATIVES
WORLD MAP
AUTHOR LISTS

VIEW EDIT MEMBERS ROLES

Group: Spokesperson's Office

NAME	Spokesperson's Office (Management)		
DESCRIPTION	ePIC Management		
EMAIL			
URL			
PRIVACY	PUBLIC		

Parent group

Sub-Groups

NAME	EMAIL	PRIVACY
Technical Coordination Office (Coordination Offices)		PUBLIC
Software and Computing (Coordination Offices)		PUBLIC
Analysis (Coordination Offices)		PUBLIC

Sub-groups

Members

ROLE	NAME	EMAIL	INSTITUTION
Deputy Spokesperson	Silvia Dalla Torre	silvia.dallatorre@ts.infn.it	INFN Sezione di Trieste and Dipartimento di Fisica, Universita d
Spokesperson	John Lajoie	lajoiejg@ornl.gov	Oak Ridge National Laboratory

MEMBERS
FILTER MEMBERS
ADD NEW MEMBER
MEMBERS HISTORY

GROUPS
ADD NEW GROUP

DOCUMENTS
DOCUMENTS
FILTER DOCUMENTS
ADD NEW DOCUMENT

EVENTS
EVENTS
FILTER EVENTS

Member attributes

- Firstname
- Lastname
- E-mail
- Institution
- ORCID
- Member of Council
- ...

The screenshot shows a web browser window with the URL `phonebook.sdcc.bnl.gov`. The page title is "ePIC COLLABORATION". The main content area displays the profile of "Peter Steinberg" from "Brookhaven National Laboratory".

On the left, there is a navigation sidebar with the following categories:

- STATISTICS
- REPRESENTATIVES
- WORLD MAP
- AUTHOR LISTS
- INSTITUTIONS
 - INSTITUTIONS
 - FILTER INSTITUTIONS
 - ADD NEW INSTITUTION
 - INSTITUTIONS HISTORY
- MEMBERS
 - MEMBERS (highlighted)
 - FILTER MEMBERS
 - ADD NEW MEMBER
 - MEMBERS HISTORY
- GROUPS
 - GROUPS
 - ADD NEW GROUP
- DOCUMENTS
 - DOCUMENTS
 - FILTER DOCUMENTS
 - ADD NEW DOCUMENT
- EVENTS
 - EVENTS
 - FILTER EVENTS
 - ADD NEW EVENT
- DESCRIPTORS
 - INSTITUTION FIELDS
 - MEMBER FIELDS
 - INSTITUTION FIELDGR...
 - MEMBER FIELDGROUPS
 - DOCUMENT FIELDS

The main content area has a "VIEW" button and an "EDIT" button. Below the member name, there is a table of attributes:

FIELD	VALUE	GROUP
First name	Peter	user name
Initials		user name
Last Name	Steinberg	user name
Latex Last Name		user name
Unicode name		user name
Inspire ID		user name
Gender	Male	user name
Area	Experiment	user name
Address line 1	PO Box 5000	user address
Address line 2	Brookhaven National Laboratory	user address
Address line 3		user address
City	Upton	user address
State/Region	New York	user address
Country	US	user address
Postcode/zipcode	11973	user address
Home institution	Brookhaven National Laboratory	user address
Additional Institution Affiliations	Massachusetts Institute of Technology (MIT)	user address
E-mail address	steinberg@bnl.gov	user contact information
Alternative e-mail address	steinber@gmail.com	user contact information
GitHub ID		user contact information
Work phone	631-344-4390	user contact information
Cell phone	917-443-7417	user contact information
Fax number		user contact information

Some of the features of Glance

Unified Data Access: Glance provides a unified interface for accessing data from distributed databases.

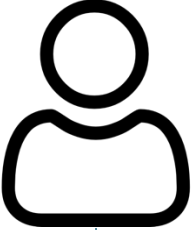
Accounting and Tracking: Glance is used to manage the accounting of contributions for the personnel involved in the ATLAS experiment.

User and Institutions Profiles: Glance supports creating and managing user profiles, including contact information and statistics.

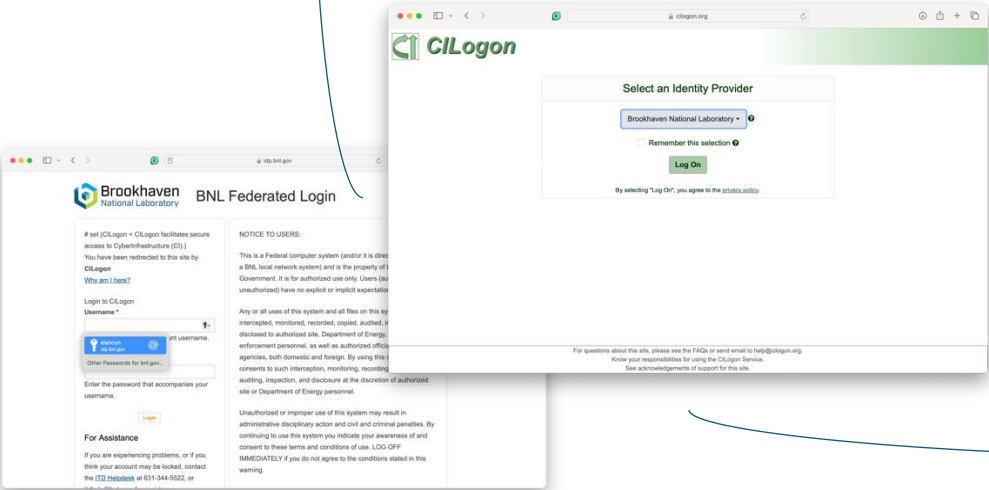
Pre-defined workflows: Glance provides pre-defined workflows (from draft to public release, including editorial review) for documents (publications to journals, conferences, technical notes)

Mapping CManage Groups & Roles with Indico Categories & Permissions

- Categories & Permissions**
- ...
 - *EIC meetings, Access*
 - *EIC meetings, Manager*
 - ...



- Groups & Roles**
- ...
 - *EIC, Member*
 - *EIC, Owner*
 - ...



1

4

5

2

7

3

6

Who is that person, what are the associated rights?

Identify yourself against your IdP

