

Using trust federations for Virtual Research Organizations at research centers in Mali and Uganda

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National Institute of Allergy and Infectious Diseases, NIH

- International Centers for Excellence in Research - ICER
 - Mali – Faculty of Medicine
 - Uganda – Rakai Health Sciences Program
 - India – National Institute for Research in Tuberculosis
- Collaborative relationship between NIAID/NIH and the sites
 - ICT assistance in infrastructure and account management
- Working with NRENs to provide better Collaboration Infrastructure
 - Data Sharing without endangering the limited bandwidth
 - Data management, data collection, and specimen management tools
 - Collaborating with sites to train next generation of researchers in computational biosciences with public private partnerships

Virtual Research Organization: Trans-institutional Collaborations

Polymorphisms in the K13-Propeller Gene in Artemisinin-Susceptible *Plasmodium falciparum* Parasites from Bougoula-Hameau and Bandiagara, Mali

Amed Ouattara, Aminatou Kone, Matthew Adams, Bakary Fofana, Amelia Walling Maiga, Shay Hampton, Drissa Coulibaly, Mahamadou A. Thera, Nouhoum Diallo, Antoine Dara, Issaka Sagara, Jose Pedro Gil, Anders Bjorkman, Shannon Takala-Harrison, Ogobara K. Doumbo, Christopher V. Plowe and Abdoulaye A. Djimde*

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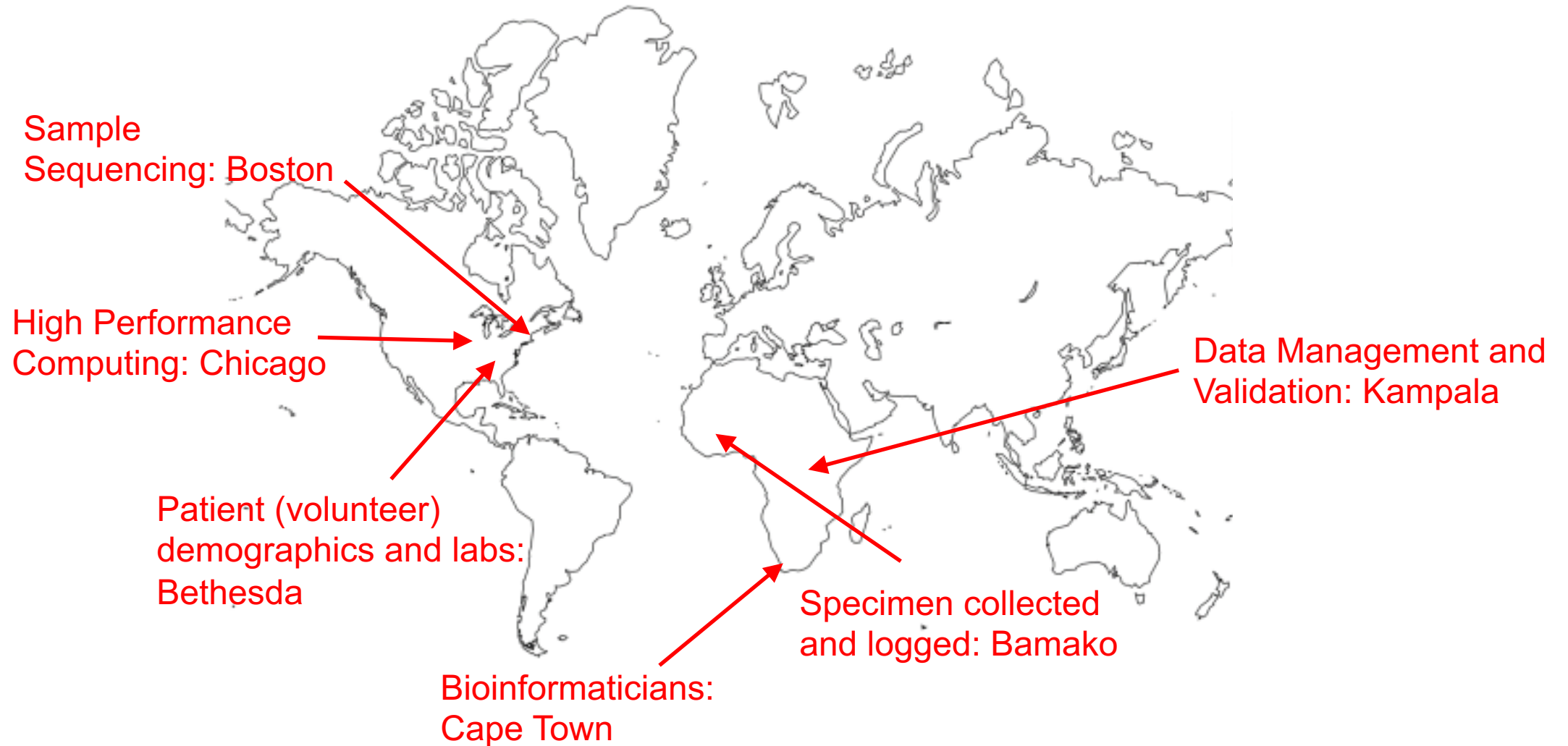
Jose Pedro Gil

The State University of New York, Binghamton

Jose Pedro Gil

Example VRO

Global Collaborations



Challenge of large data sets

Research and Education Networks

- Increasing size and quantity of data sets generated by researchers in life sciences require higher bandwidth connections
- Private Commercial providers cannot provide the necessary bandwidth to researchers
- African researchers face barriers to reliable, cheap, high capacity internet connections
- One full sequence can be in excess of 1,000 GB
 - Where do you store it?
 - How do you move it to HPC systems for analysis?

Tools and Data Repositories

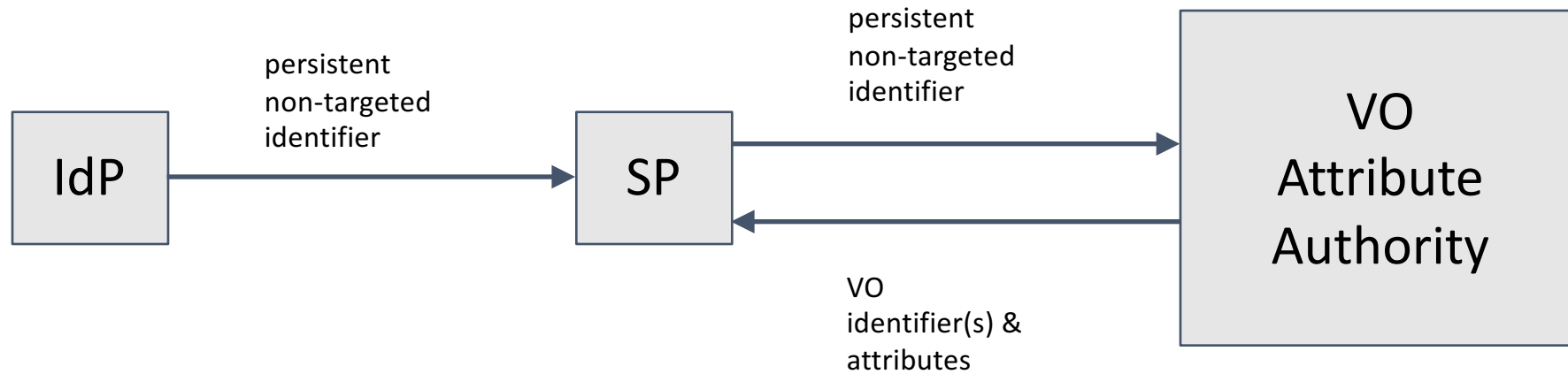
- Clinical Data Management Systems
- Specimen Management system
- Temperature monitoring and Alerting
- Sequencing and genome data repositories
- HPC Unix and Web based systems for analysis of the data
- Study/protocol management tools:
 - Documents management: standard operating procedures, workplace guidelines, protocol development
 - Project Management
 - Budget Tracking and procurement workflows
- Data Provenance

Academic Trust Federations

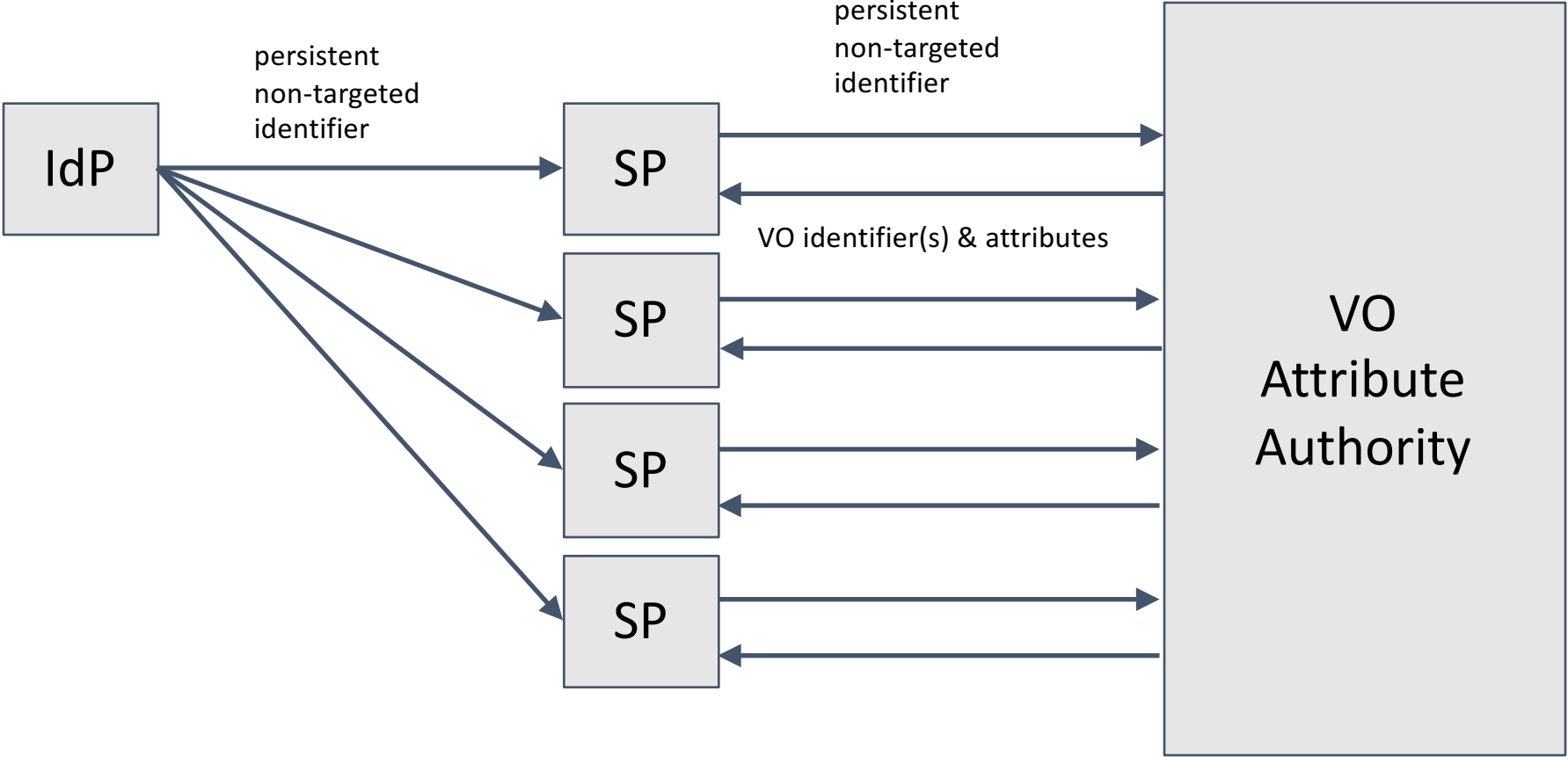
Each institution in the federation has an Identity Provider service on the Internet

- cwhalen@icermali.org – email address & identity
 - Access to online journals
 - Access to Conference Registration
 - Open Science Data Repositories
 - More resources available daily

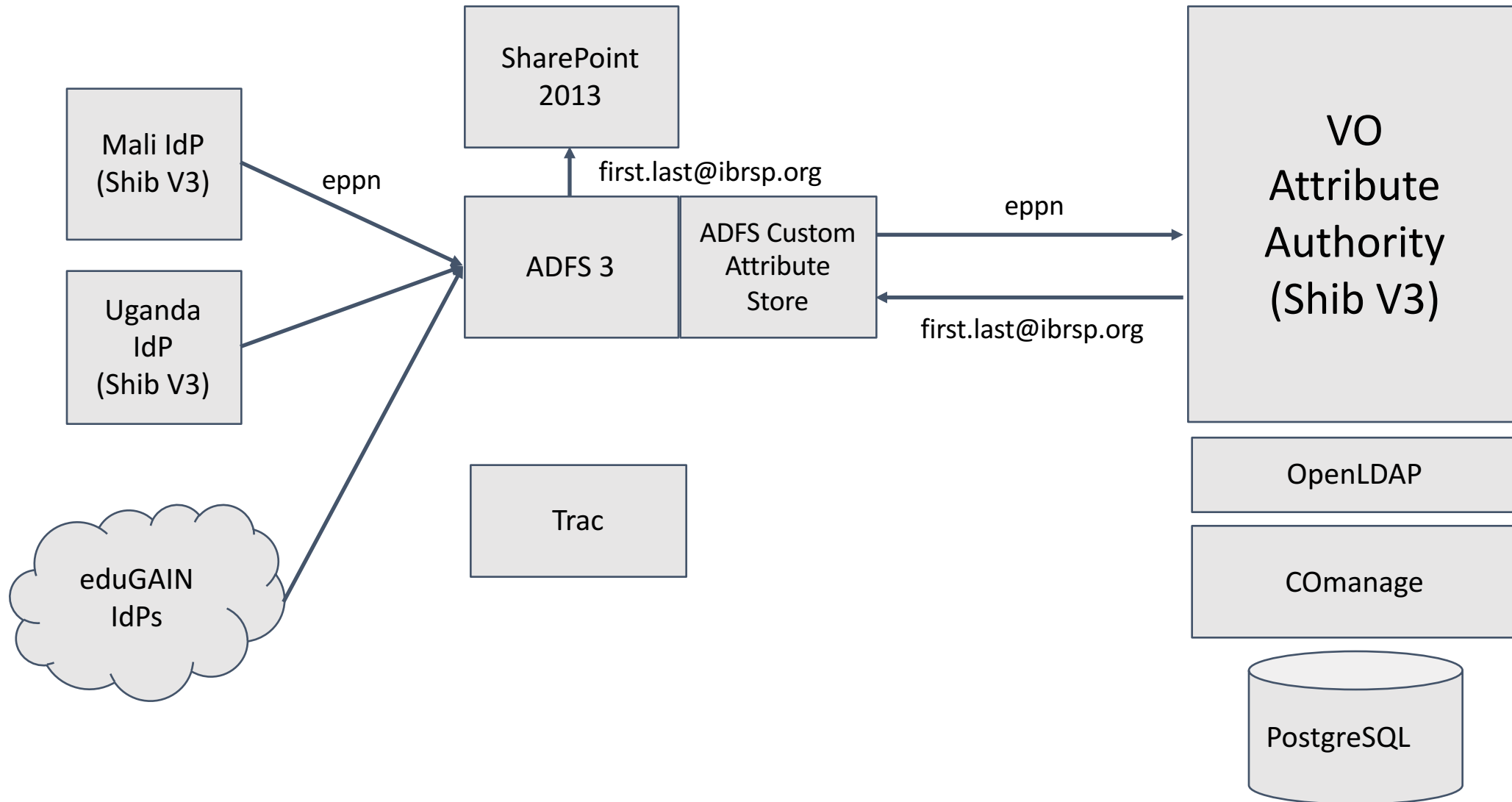
VO Federated IAM Architecture



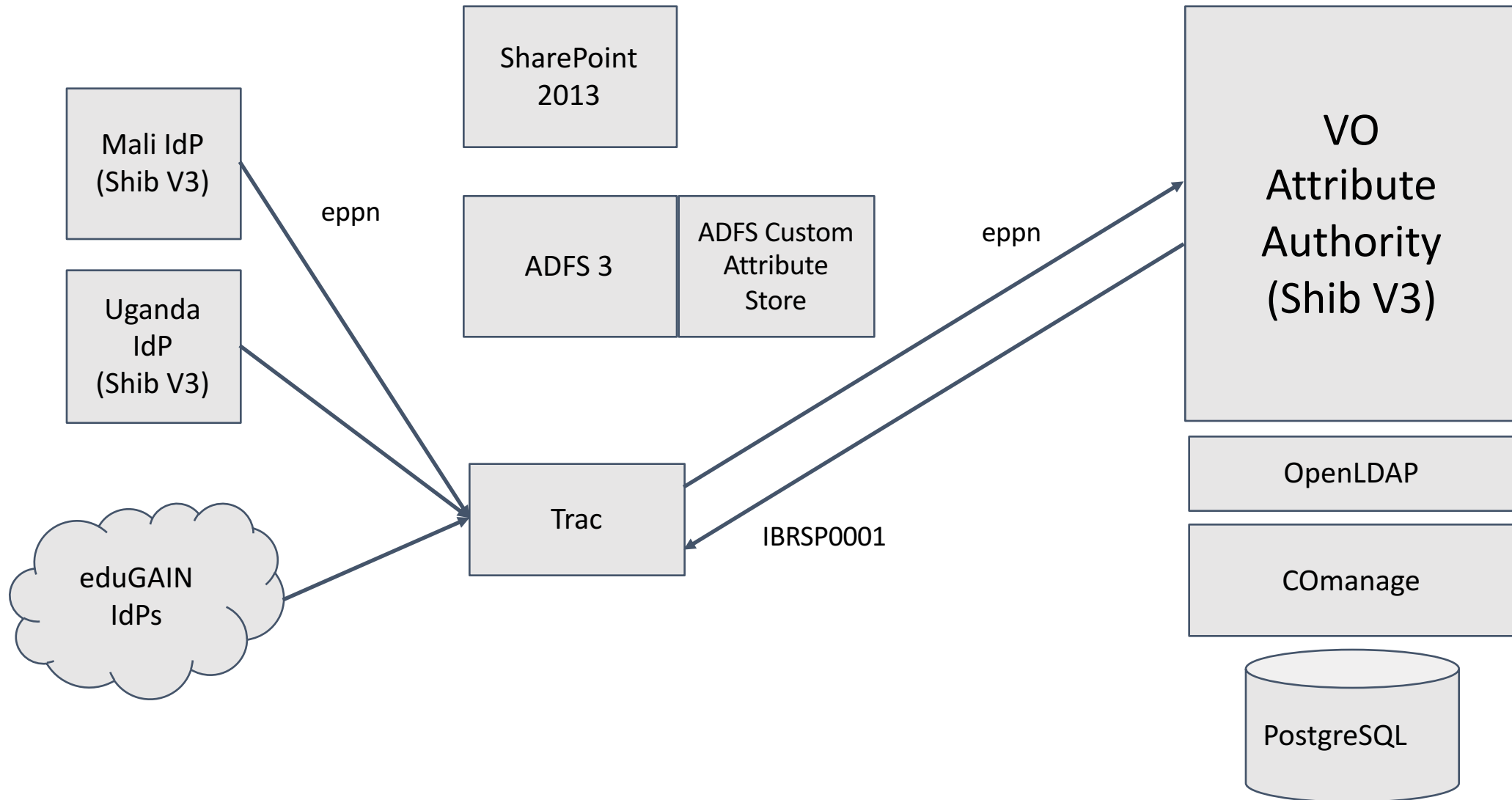
VO Federated IAM Architecture



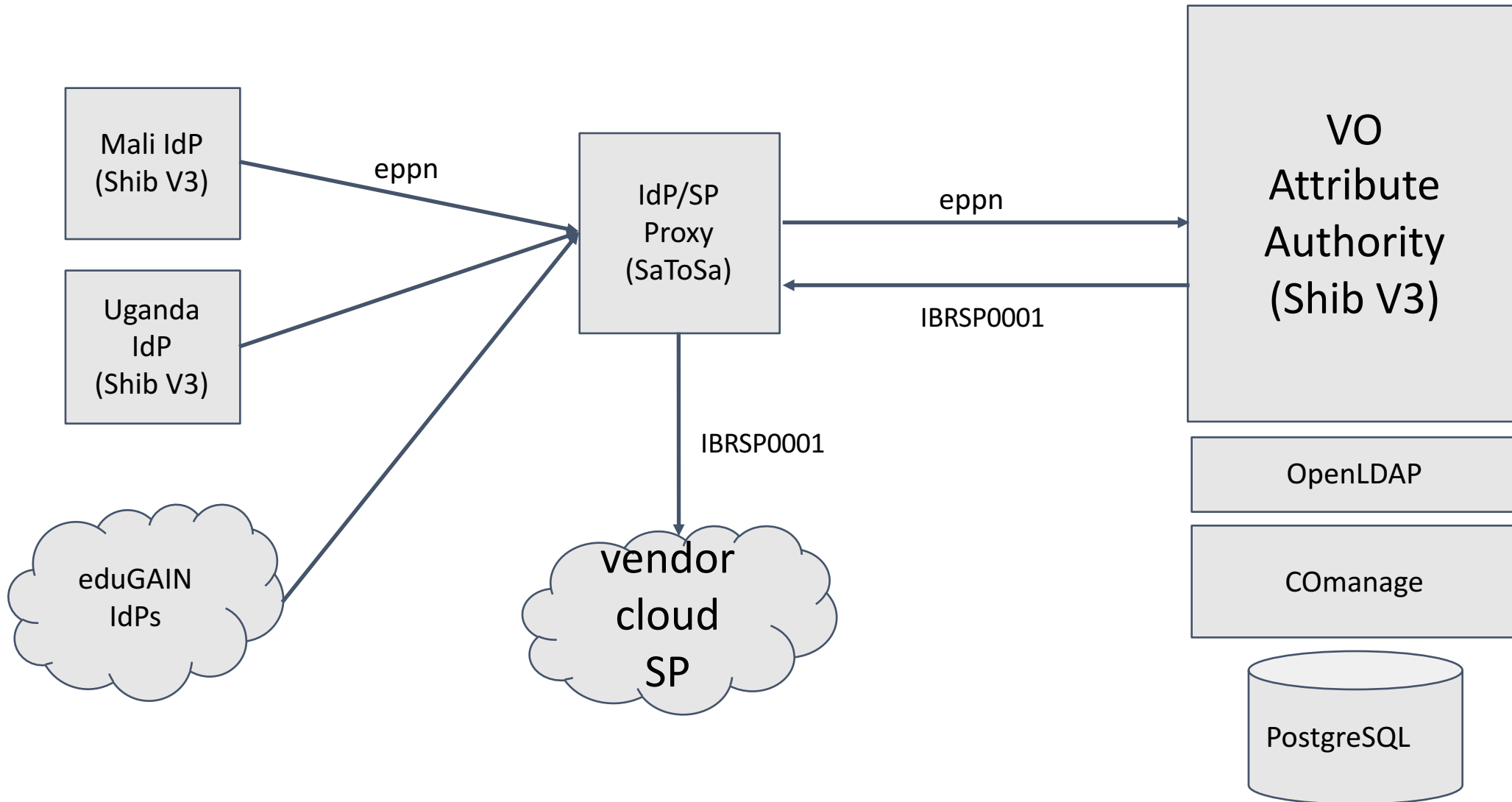
ICER Federated IAM Architecture



ICER Federated IAM Architecture



ICER Federated IAM Architecture



SharePoint collaboration platform for protocols and investigators at the Mali Faculties of Medicine and Pharmacy

The screenshot shows a SharePoint site for the African Center of Excellence in Bioinformatics. The site features a navigation menu on the left with options like 'Home', 'Documents', 'BioCompACE Requests', and 'Site Contents'. The main content area displays a banner with the text 'AFRICAN CENTERS OF EXCELLENCE IN BIOINFORMATICS BAMA KO, MALI' overlaid on a background image of a hand holding a glowing DNA helix. Below the banner are logos for various partners including FNIH, NIH, BIOTEAM, intel, and EMC². At the bottom, there is a 'Documents' section with a '+ new document or drag files here' button.

African Center of Excellence in Bioinformatics EDIT LINKS

African Center of Excellence in Bioinformatics

AFRICAN CENTERS OF EXCELLENCE IN BIOINFORMATICS
BAMA KO, MALI

Documents

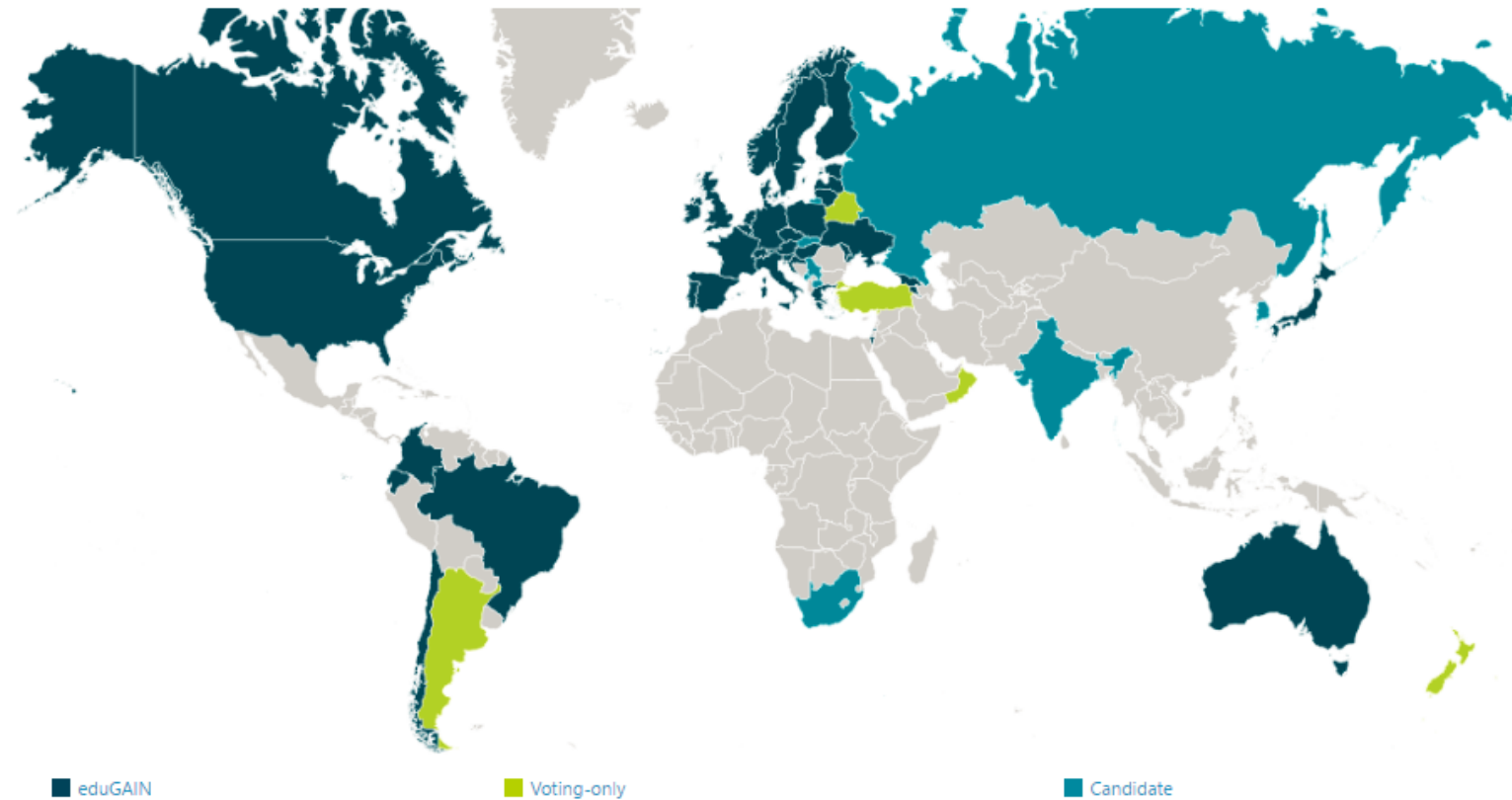
+ new document or drag files here

Trust Federations provide identity National Research and Education Networks

- NREN
 - USA – Internet2 & InCommon
 - SURFnet – Netherlands
 - Canarie – Canada
- Europe – Geant
- East Africa – Ubuntunet
 - Kenya – Kenet
 - Uganda – RENU
- West and Central Africa - WACREN
 - MaliREN

eduGAIN Federation of Trust Federations

Global



Why NREN Identity?

Why not Google, Facebook, Yahoo!, Twitter..?

Interfederation Research Participants (eduGAIN *via* InCommon, Canarie, etc.) are responsible for investigating and compliance with international privacy law of the countries where research occurs or research subjects reside - *Susan Blair, Chief Privacy Officer, University of Florida, Internet2 Global Summit 2015*

- Google Policy: “Information we collect when you are **signed into Google**, in addition to information we obtain about you from partners, may be associated with your Google Account. When information is associated with your Google Account, we treat it as personal information.”

Links to resources

- <http://www.redclara.net/index.php/productos-y-servicios/servicios-para-la-colaboracion> (click on language icon to change to English or French if you select eduGAIN you can use ICER Mali username and password to logon)
- <http://www.sci-gaia.eu/service-catalogue/>
 - Energising Scientific Endeavour through Science Gateways and e-Infrastructures in Africa
- http://www.geant.org/Services/Trust_identity_and_security/eduGAIN
 - Global identity network eduGAIN
- <https://agora.icermali.org/>
 - ACE-B Virtual Organization document management system
- <https://technical.edugain.org/entities>
 - If collaborating institutions want to give the ICER access using the federated identity give them this link

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Benn Oshrin – SPHERICAL COW

Ken Klingenstein – INTERNET2 INCOMMON

Tom Scavo – INTERNET2 INCOMMON

Ann West – INTERNET2 INCOMMON

Roland Hedberg - UMEA

Rebecka Gulliksson – UMEA

Omo Oaiya – CTO WACREN

Lloyd Ssentongo – NIAID UGANDA ICER

Moses Mubiru – NIAID UGANDA ICER

Ben Kakeeto - NIAID UGANDA ICER

Sidy Soumare – NIAID MALI ICER

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