SAML 2 VO Platform

Enable collaboration beyond institutional boundaries

SWITCH

Serving Swiss Universities

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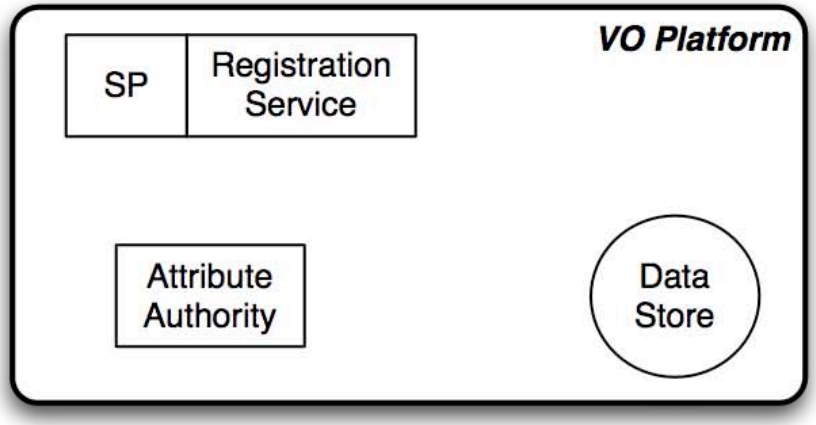
The VO Problem

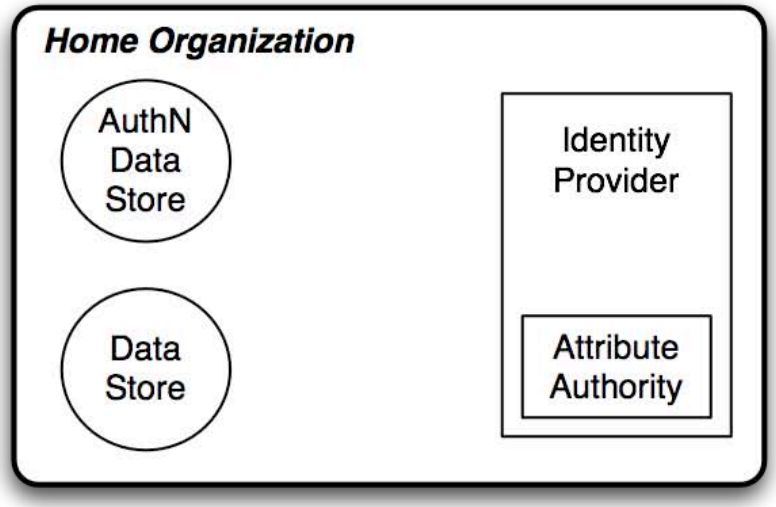
- Support for Virtual Organizations across institutional boundaries is unsolved
  - Who belongs to the VO, who not?
  - Where to store VO specific attributes shared by multiple services?
- Storing VO specific info in the HomeOrg IdPs is unfeasible
- *Virtual Organization = A group of collaborating individuals*

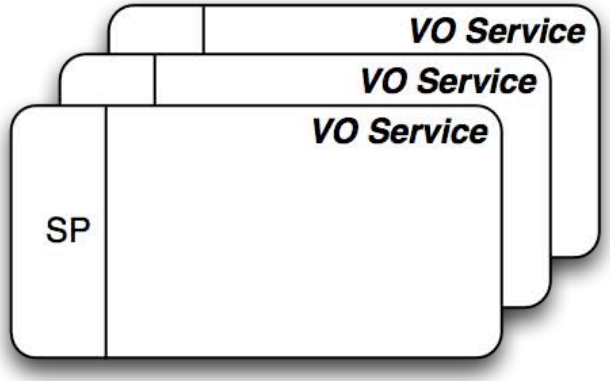
The Idea

- Use VO Platform(s) to store VO specific info
- Let SP aggregate attributes
  - from users Home Institution, and
  - from VO Platform(s)
- Use a shared identifier between all involved entities
- Use standard SAML 2 back-channel attribute queries to SAML 2 Attribute Authorities

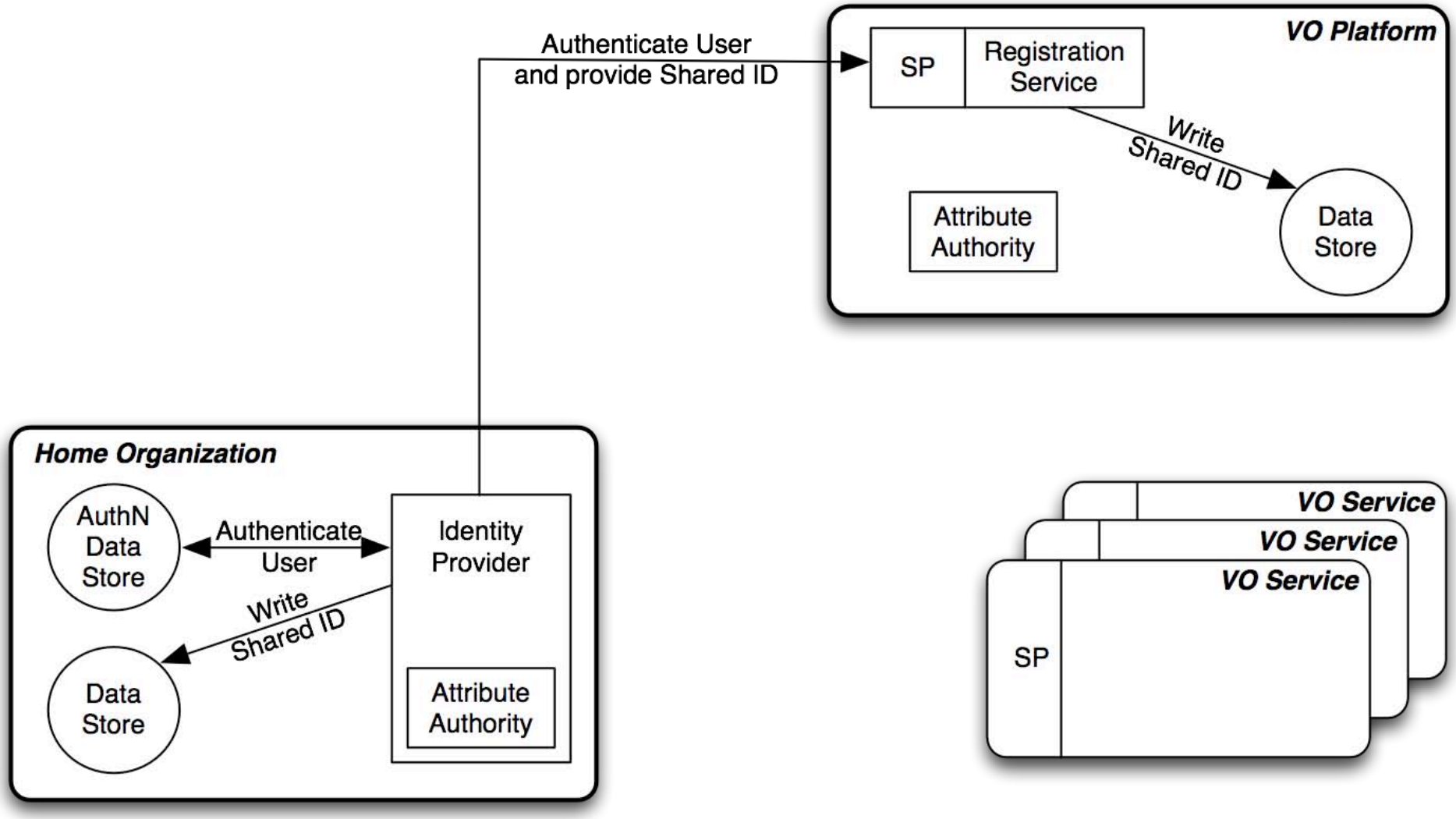
The Components







User registers on the VO Platform



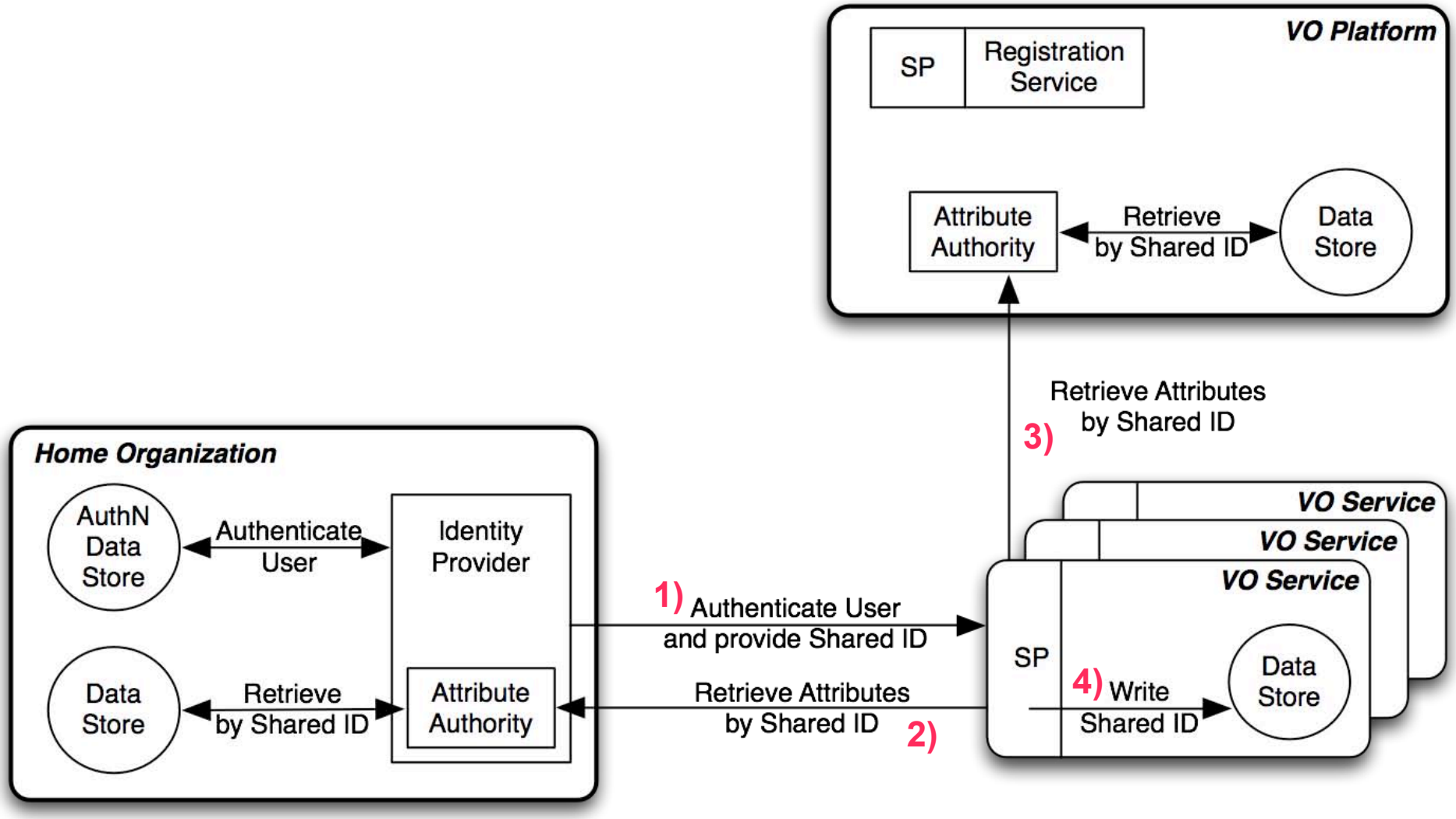
Shared ID

- Attribute known by Home IdP, VO Services SP and VO Platform
- Used as SAML 2 Persistent NameIdentifier for attribute request
- Could be a common identifier like swissEduPersonUniqueID
  - Rather unlikely for generic VOs
  - Problematic if IDs are already widely known

- Could also be a value of the form eduPersonTargetedID that is generated by the IdP for an SP or group of VO SPs with:

```
<EntityDescriptor entityID="http://vo.example.org/biomed">
   <AffiliationDescriptor affiliationOwnerID="http://vo.example.org/vo">
      <AffiliateMember>http://vo.example.org/vo</AffiliateMember>
      <AffiliateMember>http://vo1.example1.org/sp1</AffiliateMember>
      <AffiliateMember>http://vo1.example2.org/sp2</AffiliateMember>
   </AffiliationDescriptor>
</EntityDescriptor>
```

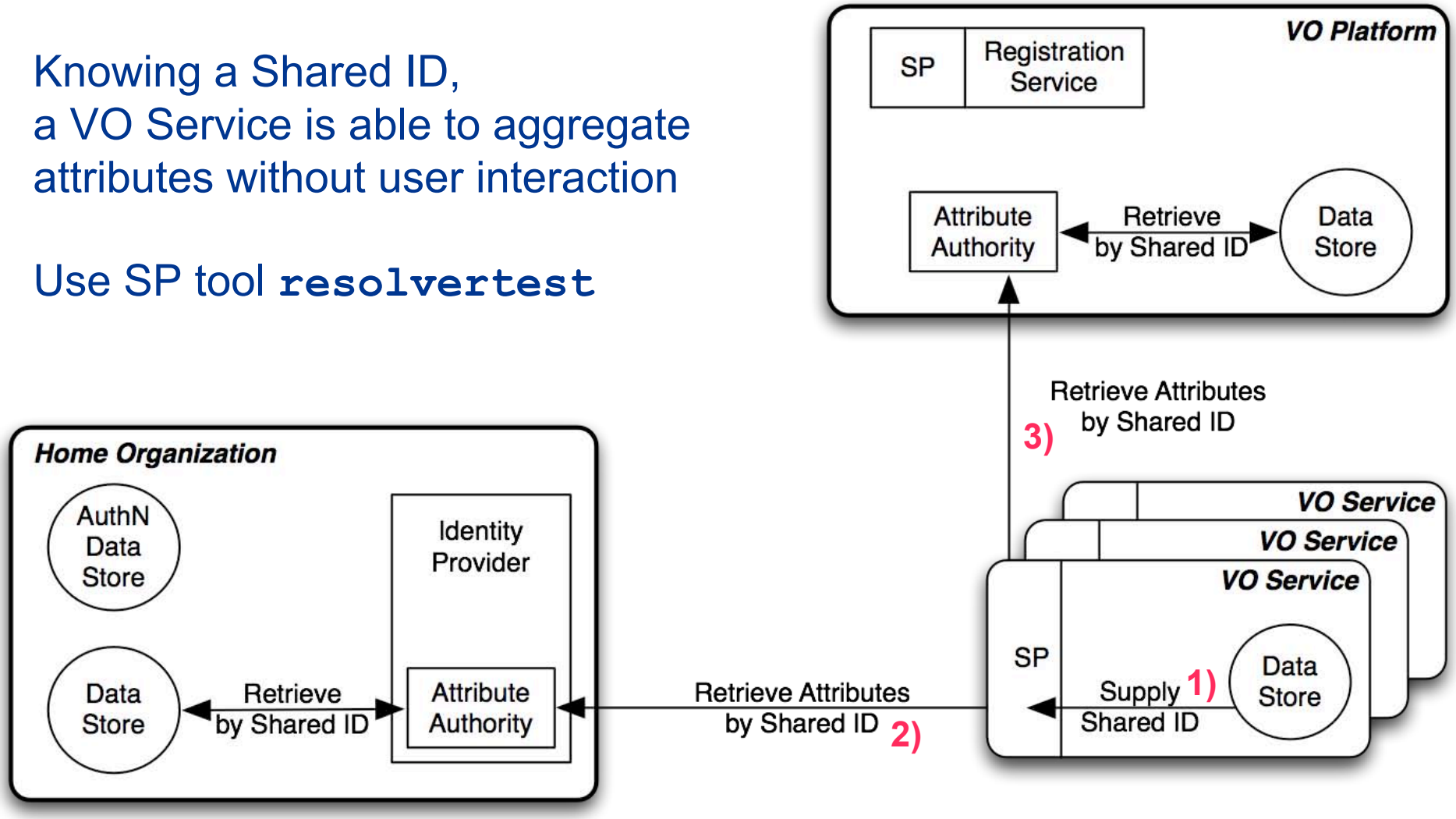
User connects to a VO Service



VO Service aggregates attributes

Knowing a Shared ID,
a VO Service is able to aggregate attributes without user interaction

Use SP tool **`resolvertest`**



Authentication Request of an SP in a VO

If an SP acts as member of a group of VO Services,
it uses the common VO Services entityID
as SPNameQualifier in the authentication request

```
<AuthnRequest ID="12345" Version="2.0"
  IssueInstant="2009-01-01T12:00:00Z">
   <NameIDPolicy
     SPNameQualifier="http://vo.example.org/biomed"/>
</AuthnRequest>
```

The Library Use Case

- The VO: Swiss University Libraries
  - In the beginning the IDS libraries with Ex Libris Aleph
    - Primary interest of IDS: get rid of the proprietary Aleph «Shared User File»
- VO Services
  - The Aleph library systems using Shibboleth with Ex Libris PDS
- A shared Library IdP for all users without an AAI account
- Proposal for an E-lib.ch web portal sub project

Shibboleth SP with two static VO Platforms

- Two (VO) IdPs are queried in addition using eduPersonTargtedID as NameIdentifier

Shibboleth2.xml:

```
<AttributeResolver type="Chaining">
    <!-- Use a standard SAML query if no attributes
         are supplied during SSO. -->
    <AttributeResolver type="Query"/>

   <!-- Uses eduPersonTargetedID
        from IdP to query as NameID -->
    <AttributeResolver
      type="SimpleAggregation"
      attributeId="eduPersonTargetedID"
      format="urn:mace:dir:attribute-def:eduPersonTargtedID">
        <Entity>https://vo-idp.switch.ch/idp/shibboleth</Entity>
        <Entity>https://other-vo-idp.switch.ch/idp/shibboleth</Entity>
    </AttributeResolver>
</AttributeResolver>
```

https://spaces.internet2.edu/display/SHIB2/NativeSPAttributeResolver

Shibboleth SP with dynamic VO Platform(s)

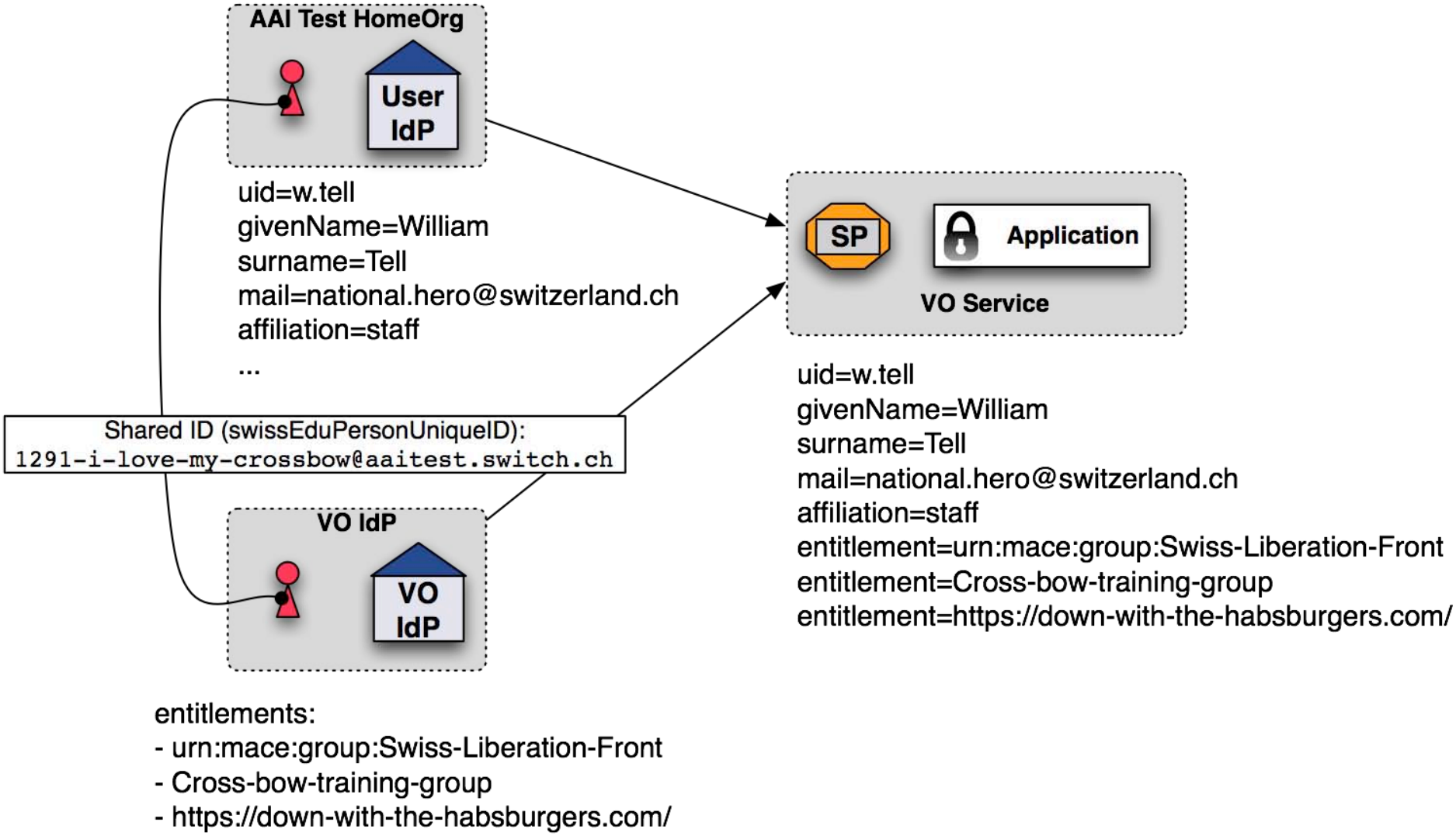
- Besides the static (VO) IdP the entitlement attribute is checked for entityIDs to query

Shibboleth2.xml:

```
<AttributeResolver type="Chaining">
    <!-- Use a standard SAML query if no attributes
         are supplied during SSO. -->
    <AttributeResolver type="Query"/>

    <!-- Uses eduPersonTargetedID
         from IdP to query as NameID -->
    <AttributeResolver
       type="SimpleAggregation"
       attributeId="eduPersonTargetedID"
       format="urn:mace:dir:attribute-def:eduPersonTargtedID">
            <EntityReference>Shib-EP-Entitlement</EntityReference>
            <Entity>https://vo-idp.switch.ch/idp/shibboleth</Entity>
    </AttributeResolver>
</AttributeResolver>
```

Demo Overview



Demo instructions

Demo uses the swissEduPersonUnique ID as shared ID:

- Access https://dieng.switch.ch/vo-enabled/?simple
- Use “AAI Test Home Organisation (Shibboleth 1.3)” as IdP
- Authenticate with “w.tell”/”demo” as username/password
- Entitlement attribute comes from VO IdP,
  the other attributes from above selected user IdP
- Click on “Show Shibboleth assertions”

Advantages

- No additional protocols, pure SAML2
- VO Service application needs no modification
- Simple configuration on SP side (see previous slides)
- SP gets access to VO attributes the same way as any other IdP attribute
- Attribute requests to multiple VO platforms can be configured statically or dynamically

Disadvantages

- **SP in VO Services must know shared ID**
  - Is this a problem if the eduPersonTargetedID is the same for all SPs of the same group of VO Services?

Requirements for this approach

- **Shibboleth SP 2.2**
  - Already available, implements simple attribute aggregation
- **Shibboleth IdP 2.2 + AffiliationDescriptor extension**
  - Expected in early 2010
- **Registration Service on the VO Platform**
  - Needs to be implemented
  - Partly VO specific (e.g. processes)

https://spaces.internet2.edu/display/~lajoie@idp.protectnetwork.org/VOPlatform

http://wiki.geant.net/bin/view/JRA3/VirtualOrganizations

Simple Proof-of-Concept using GMT

- Soon finished…
- Idea is to use the Group Management Tool as VO Management interface
- GMT stores data in MySQL database so that group information can be read by Shibboleth IdP
- Names of groups a user is member of will be values for the entitlement attribute