#UMACHAT

Wed March 14 9am Pacific

Tech Talk: User-Managed Access (UMA): What and Why

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@UMAWG

Agenda

What is UMA?

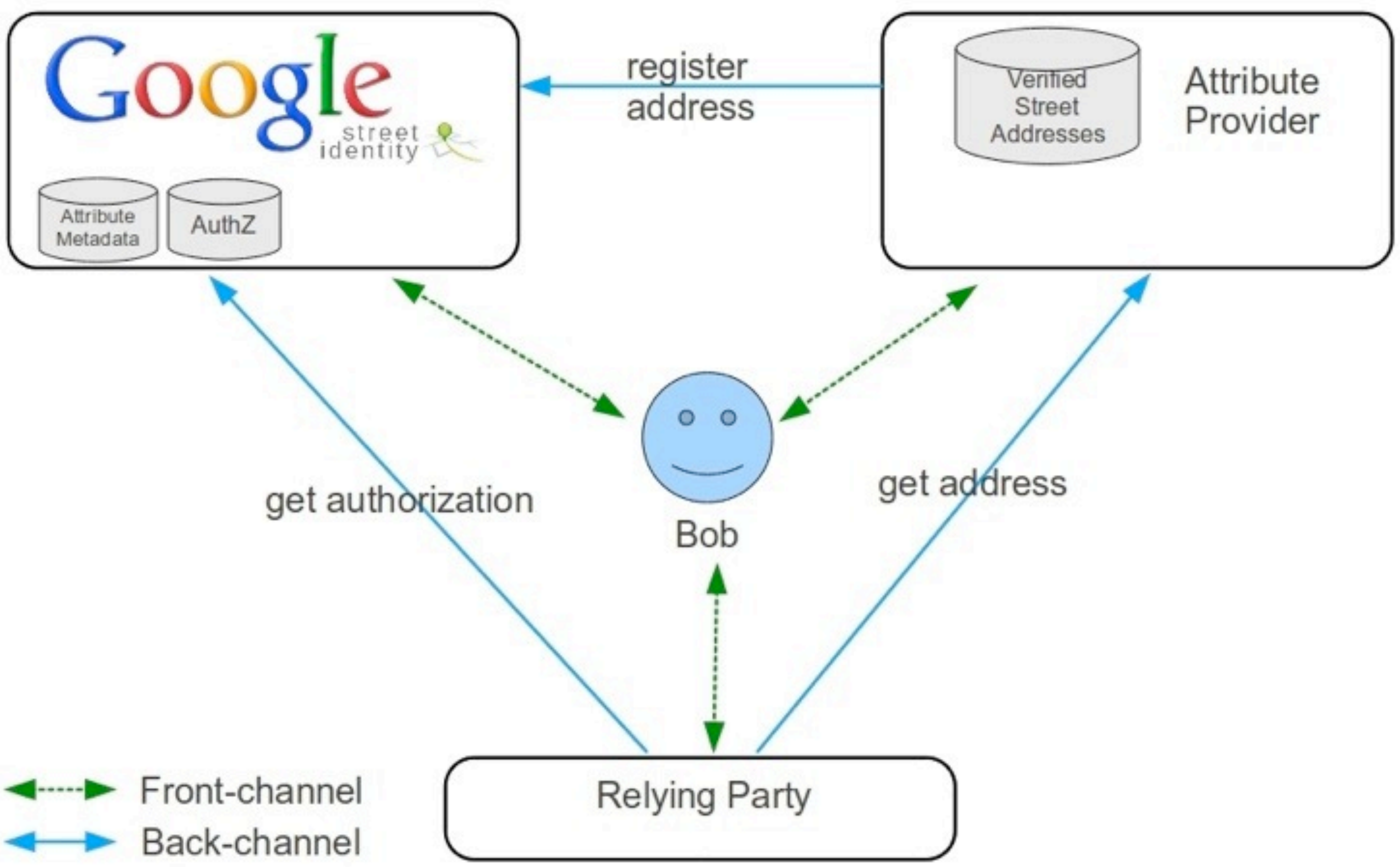
Demos

Why UMA-enable?

Q&A

Let's start with "What is Street Identity?"

If an app you want to use needs to know your verified street address, a trusted authority can share it with your consent



Learn more at **streetidentity.com** or email **mmachulak@google.com**

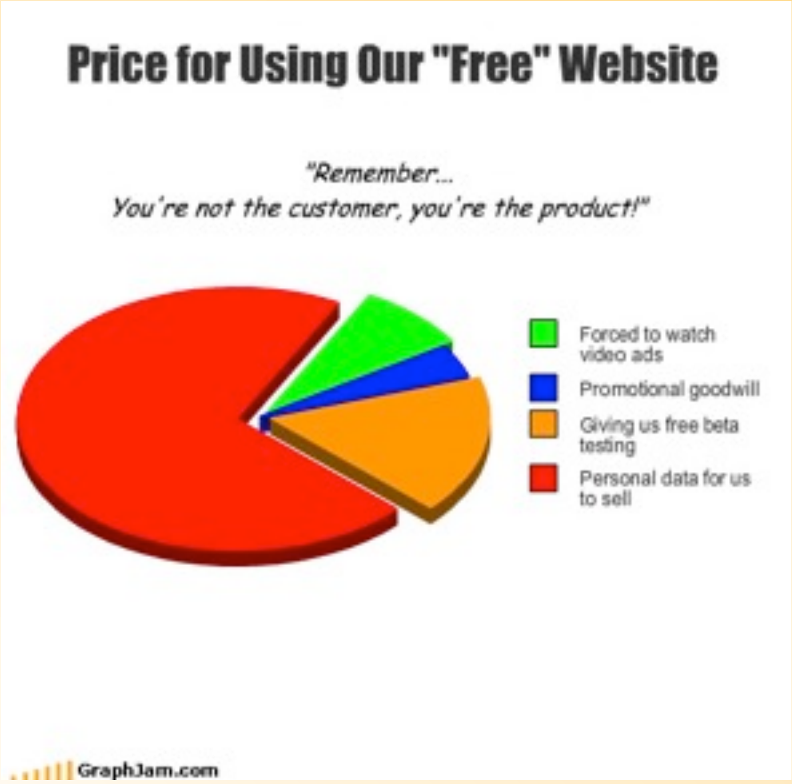
Privacy is not about secrecy

> "The goal of a flexible, user-centric identity management infrastructure must be to allow the user to quickly determine what information will be revealed to which parties and for what purposes, how trustworthy those parties are and how they will handle the information, and what the consequences of sharing their information will be"
>
> – Ann Cavoukian, Information and Privacy Commissioner of Ontario, **Privacy in the Clouds** paper

It's about context, control, choice, and respect

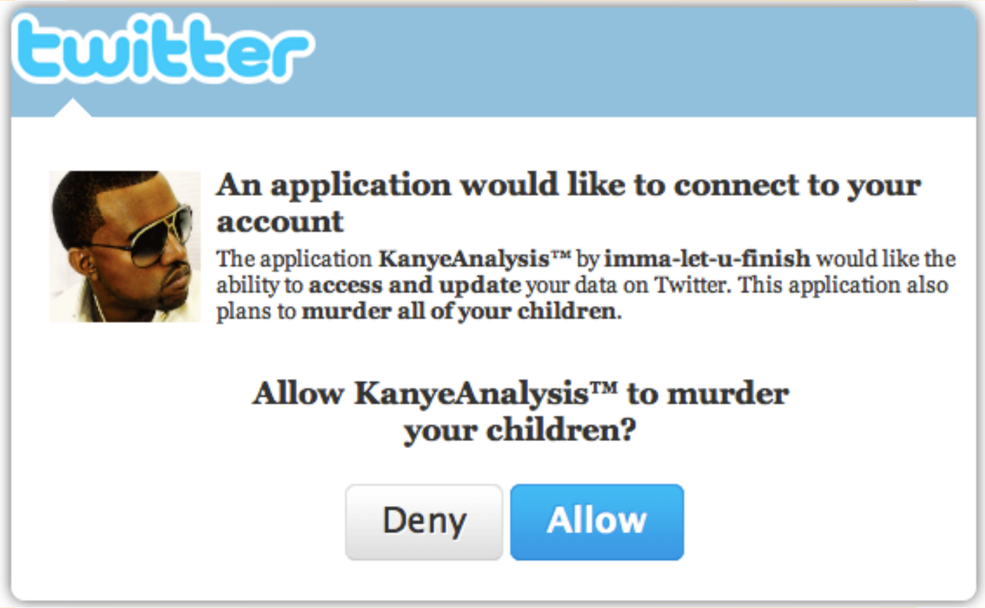
The price for sharing access to data and services is too high

Either we have to do all the work ourselves



...often in the role of the "product," not the "customer"

Or we have to agree to install large data pipelines



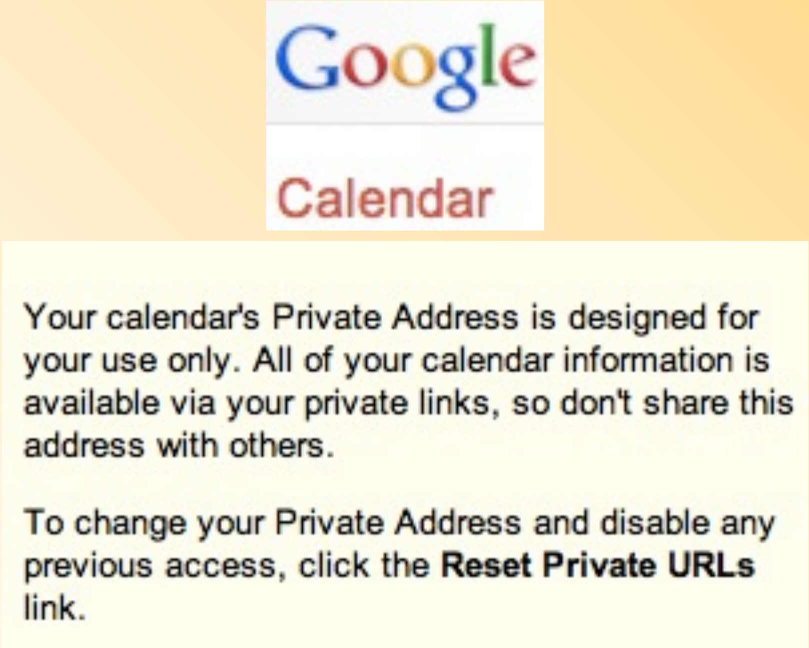
An application would like to connect to your account

The application **KanyeAnalysis™** by **imma-let-u-finish** would like the ability to **access and update** your data on Twitter. This application also plans to **murder all of your children.**

Allow KanyeAnalysis™ to murder your children?

...resulting in oversharing of high-quality data and a "too many subscriptions" problem

Or we share with friends through "secret links"



Your calendar's Private Address is designed for your use only. All of your calendar information is available via your private links, so don't share this address with others.

To change your Private Address and disable any previous access, click the **Reset Private URLs** link.

...rebuilding friend lists over and over – and hoping they won't give away the store

UMA is...

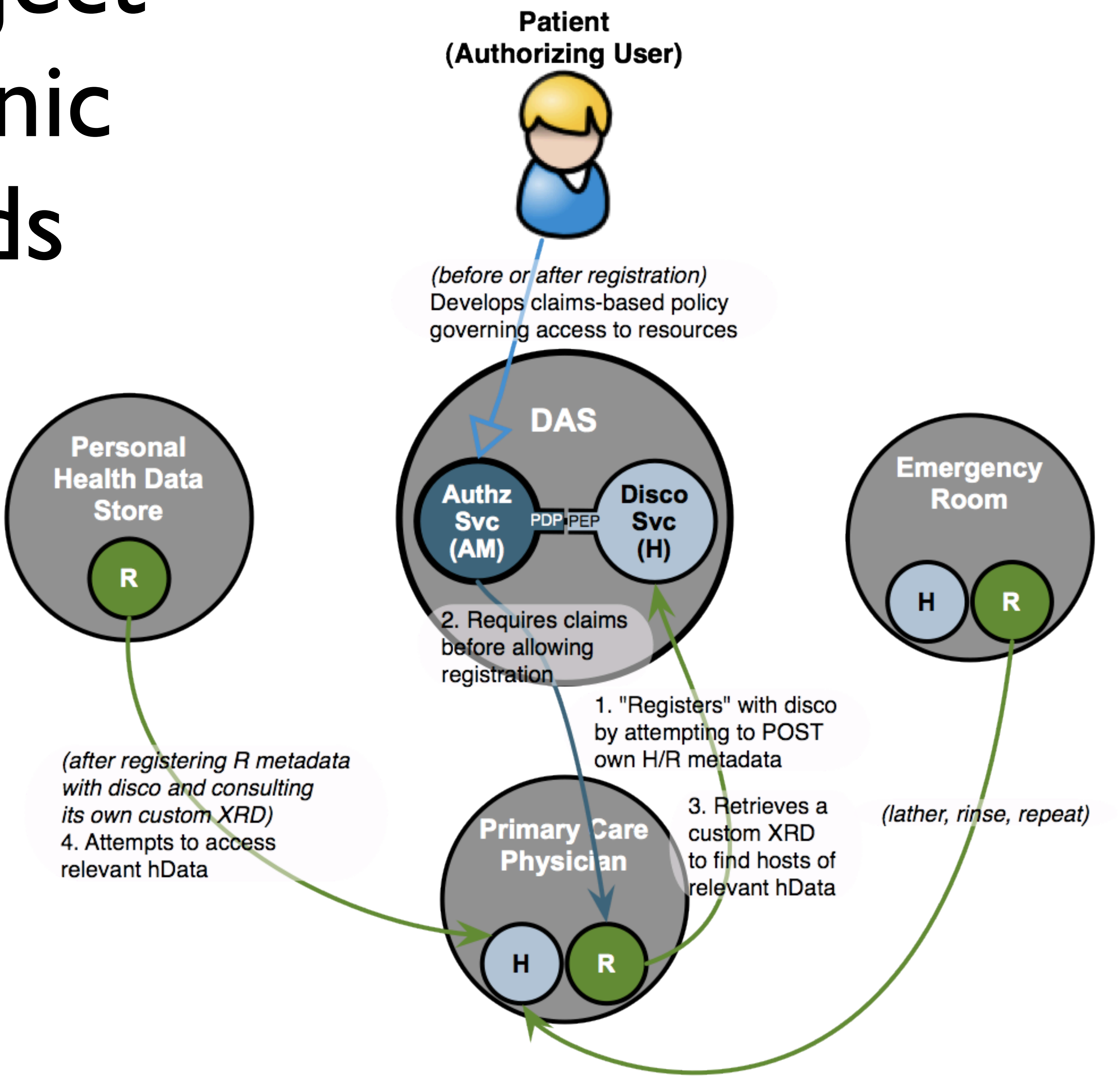
- A web protocol that lets you control access by anyone to all your online stuff from one place
- A set of draft specifications, free for anyone to implement
- Undergoing multiple implementation efforts
- A Work Group of the Kantara Initiative, free for anyone to **join** and contribute to
- Simple, OAuth-based, identifier-agnostic, RESTful, modular, generative, and developed rapidly
- Contributed to the IETF for consideration: draft-hardjono-oauth-umacore
- Currently undergoing interop testing and increased OpenID Connect integration

What could you do with Street Identity if it were UMA-enabled?

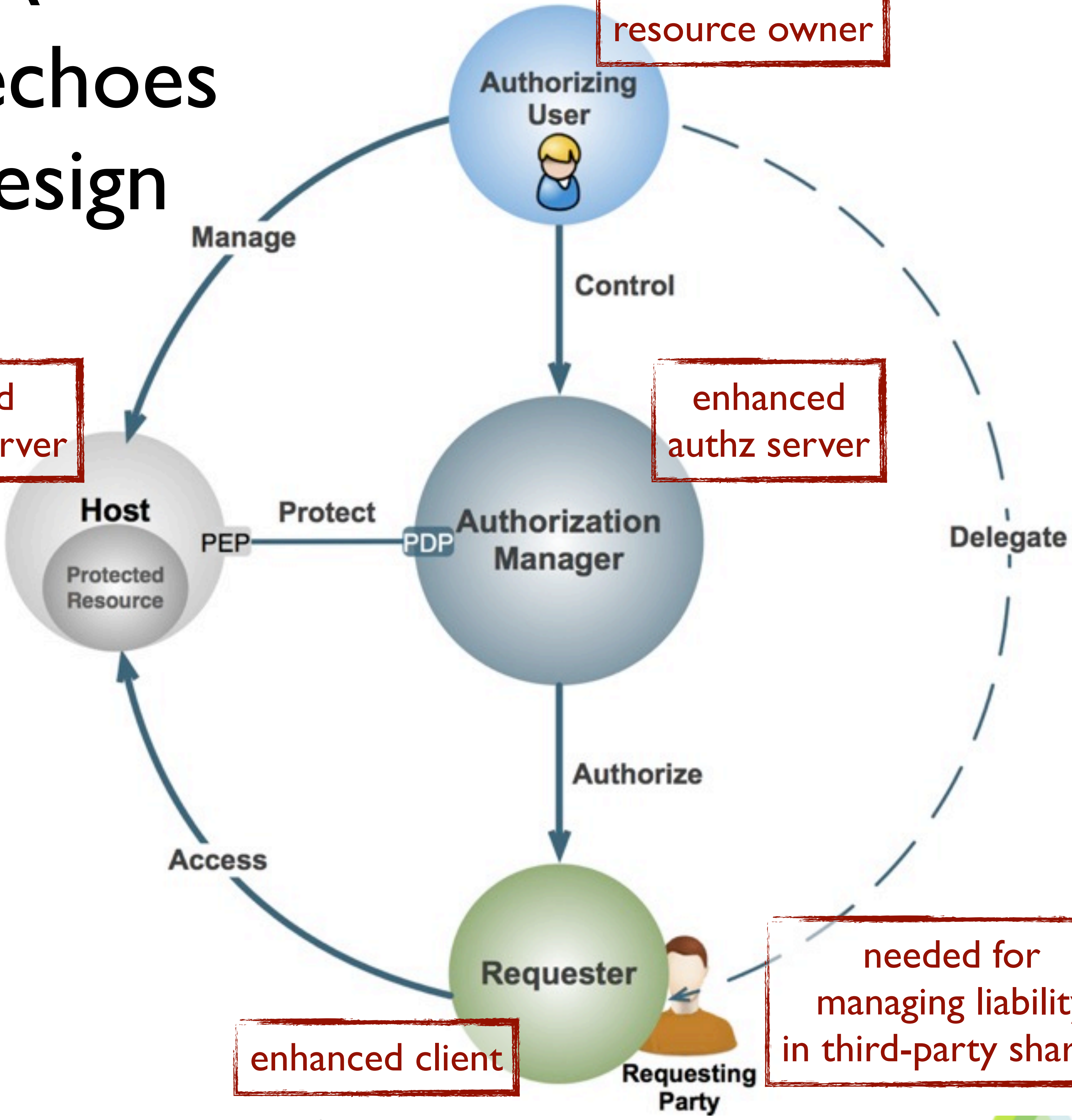
- **Centralize** how you manage sharing your street address *and* other data and content hosted elsewhere
- Share your address with **others** in an automatic, policy-driven way (“only bob@gmail can see this”)
- Let others qualify to get access **without** your having to be around at access-time
- Impose enforceable **terms and conditions** on address recipients (“you may not sell this data”), privacy-enabling your data sharing more actively

Protecting Project hData electronic health records

- EHRs need high security *and* third-party access *and* dynamic introduction of parties


Patient
(Authorizing User)
(before or after registration)
Develops claims-based policy governing access to resources
DAS
Authz Svc (AM)
PDP
PEP
Disco Svc (H)
Personal Health Data Store
R
Emergency Room
H
R
2. Requires claims before allowing registration
1. "Registers" with disco by attempting to POST own H/R metadata
(after registering R metadata with disco and consulting its own custom XRD)
4. Attempts to access relevant hData
Primary Care Physician
3. Retrieves a custom XRD to find hosts of relevant hData
(lather, rinse, repeat)
H
R

The UMA architecture echoes OAuth, by design



enhanced resource owner

enhanced resource server

enhanced authz server

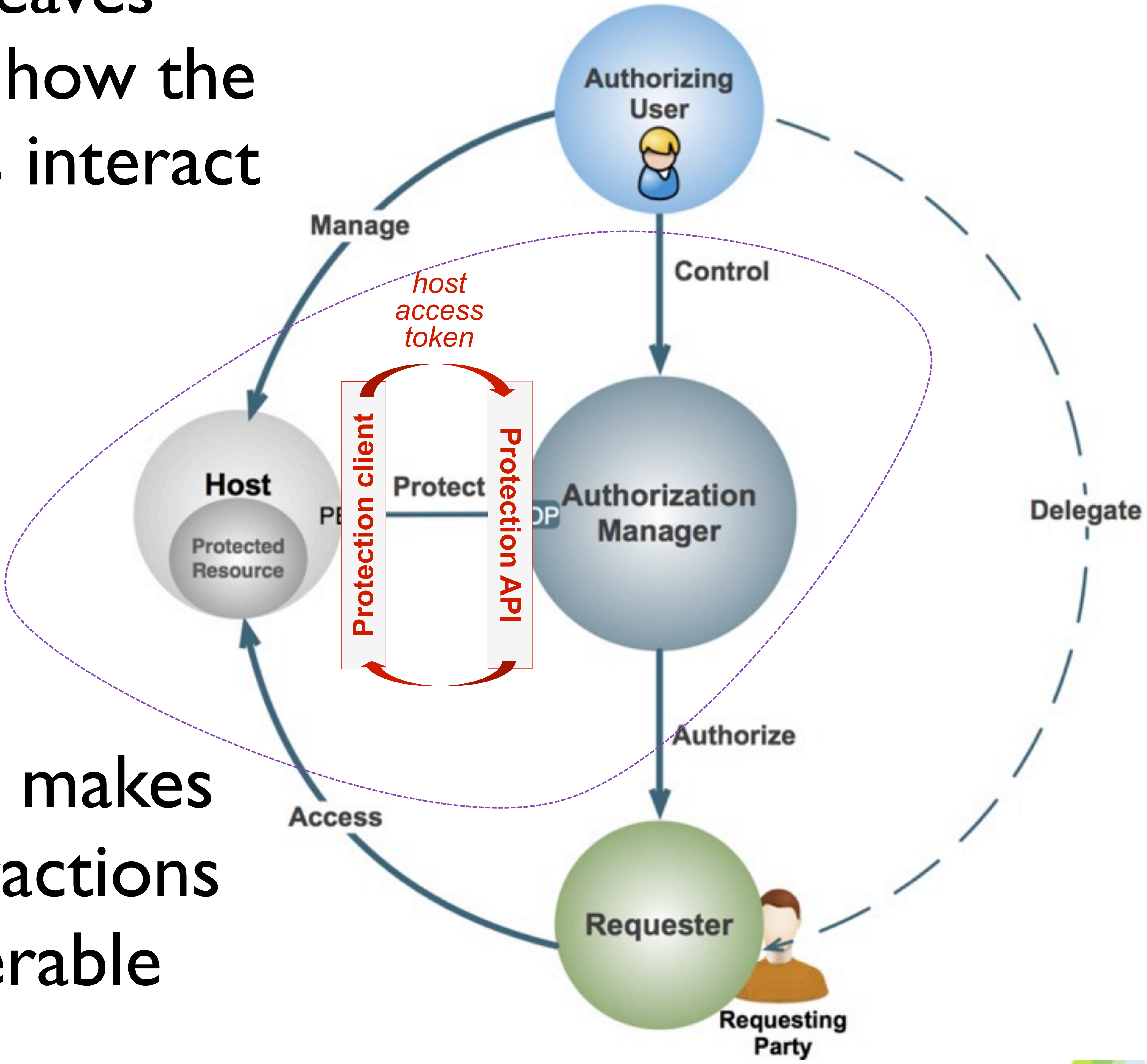
enhanced client

needed for managing liability in third-party sharing

OAuth leaves unspecified how the two servers interact

Phase 1: protect resource

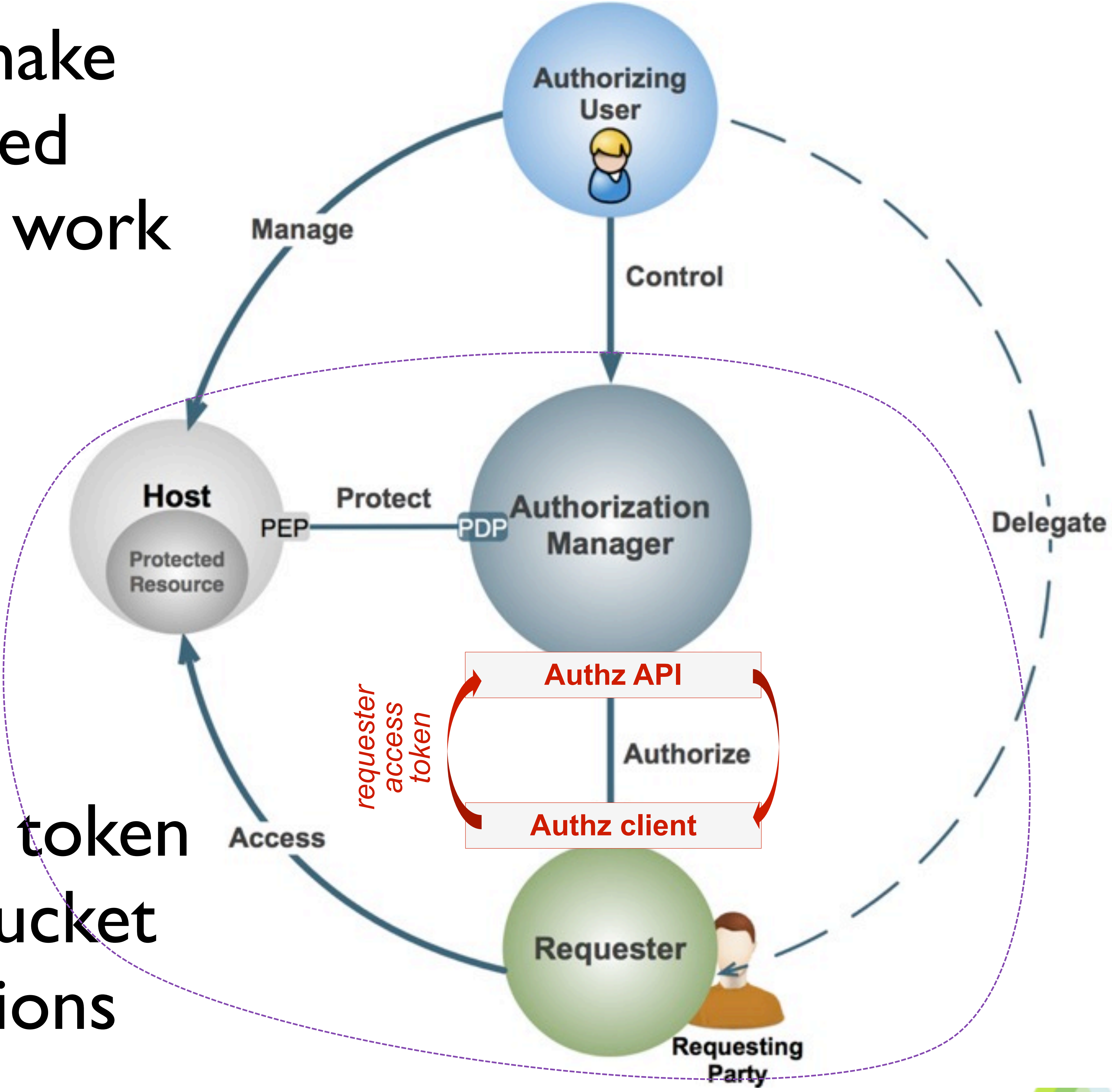
...so UMA makes their interactions interoperable

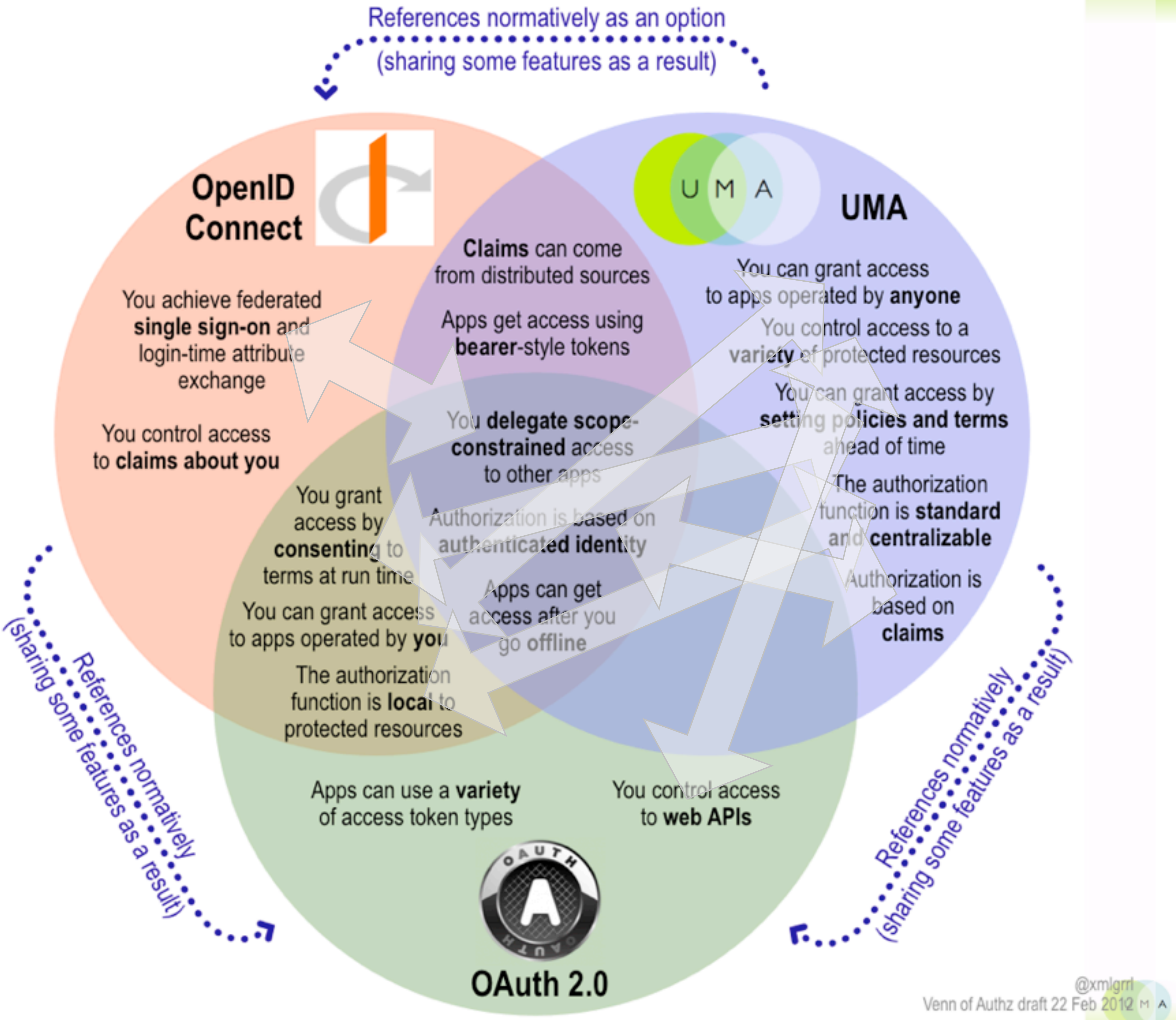


UMA must *extend* OAuth to make claims-based authorization work

Phases 2 & 3: get authz and access resource

...so an access token becomes a bucket for permissions





References normatively as an option (sharing some features as a result)

OpenID Connect

You achieve federated **single sign-on** and login-time attribute exchange

You control access to **claims about you**

UMA

You can grant access to apps operated by **anyone**

You control access to a **variety** of protected resources

You can grant access by **setting policies and terms** ahead of time

The authorization function is **standard** and **centralizable**

Authorization is based on **claims**

Claims can come from distributed sources

Apps get access using **bearer**-style tokens

You **delegate scope-constrained** access to other apps

Authorization is based on **authenticated identity**

Apps can get access after you **go offline**

You grant access by **consenting** to terms at run time

You can grant access to apps operated by **you**

The authorization function is **local** to protected resources

Apps can use a **variety** of access token types

You control access to **web APIs**

OAuth 2.0

References normatively (sharing some features as a result)

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@xmlgrrl
Venn of Authz draft 22 Feb 2012

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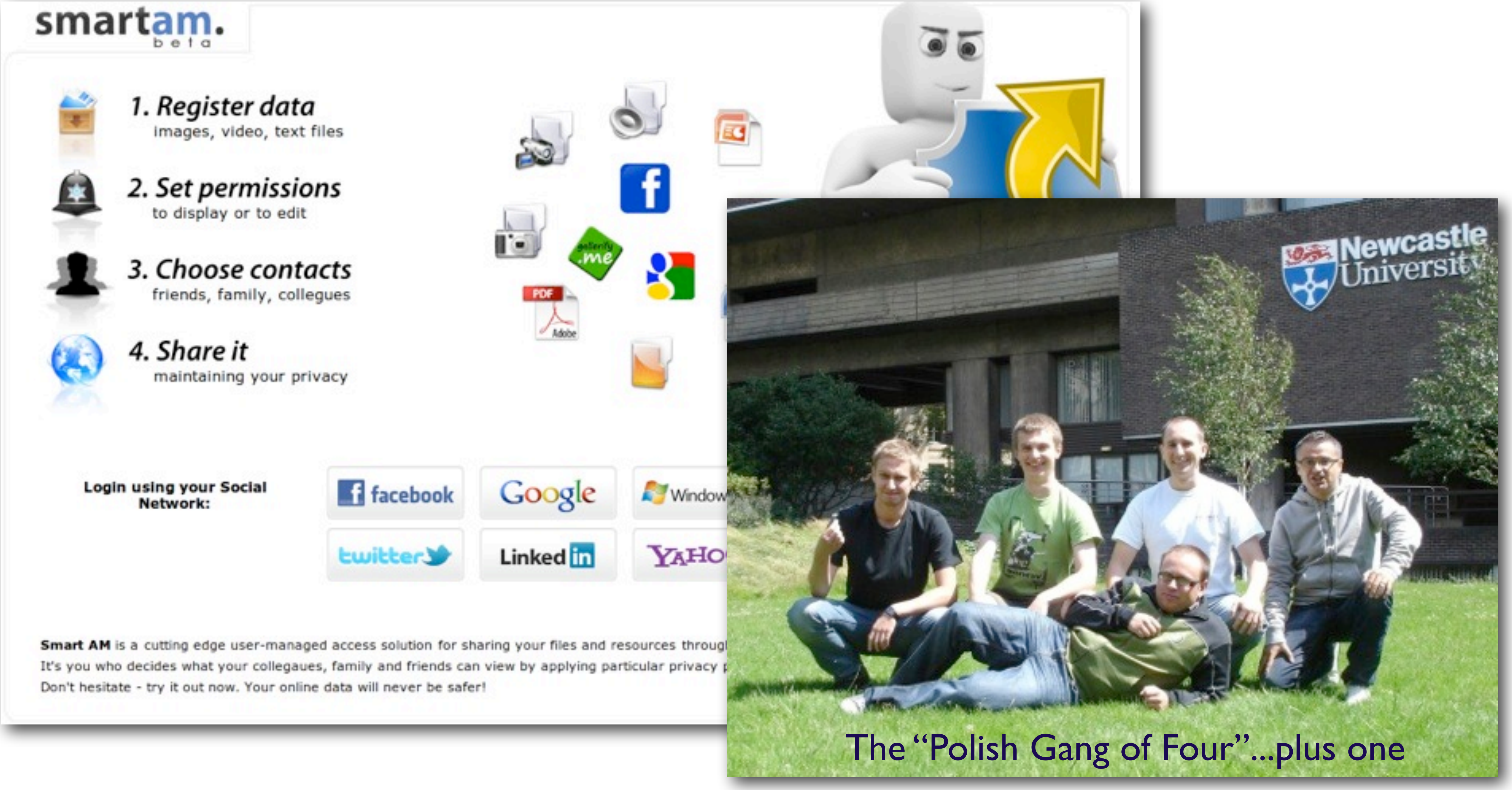
The SMARTAM.org project



smartam. beta

1. Register data
images, video, text files

2. Set permissions
to display or to edit

3. Choose contacts
friends, family, collegues

4. Share it
maintaining your privacy

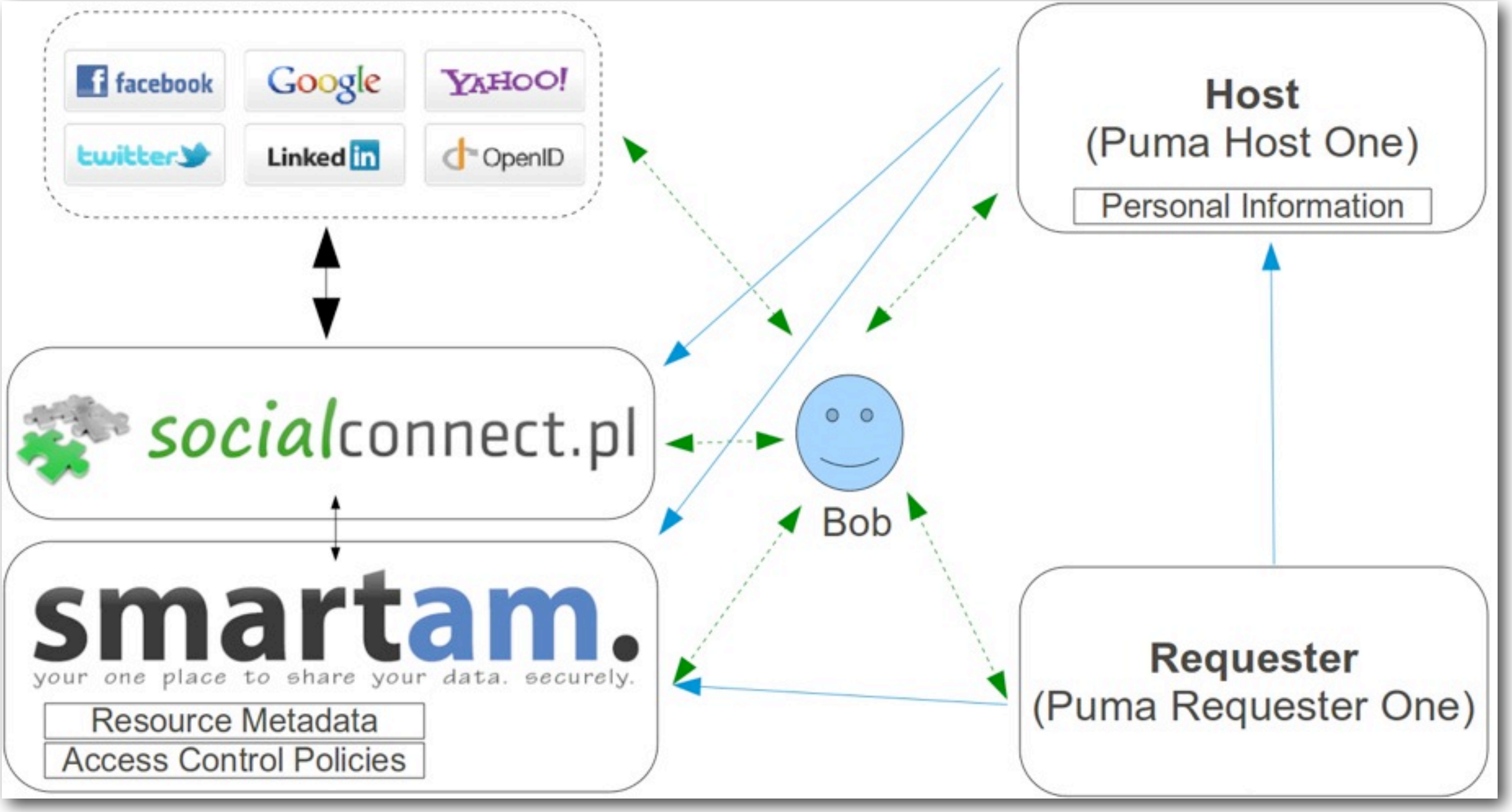
Login using your Social Network:

Smart AM is a cutting edge user-managed access solution for sharing your files and resources throug
It's you who decides what your collegaues, family and friends can view by applying particular privacy p
Don't hesitate - try it out now. Your online data will never be safer!

The "Polish Gang of Four"...plus one

See also the SMARTAM implementation FAQ

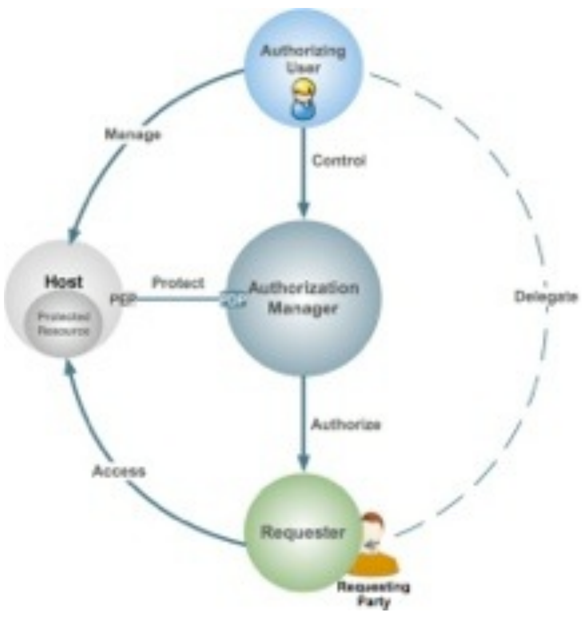
SMART demo scenario



UMA Reference Implementation

Use Case: Controlling Photo Sharing

Fraunhofer
AISEC



Contact:
Mario.Hoffmann@aisec.fraunhofer.de
Alam.Mohammad@aisec.fraunhofer.de

Mario

Host
Stores photos in gallery.

Eve

User
Controls access to her photo(s)

Mario's boss

Requester
Would like to gain access to photo(s)

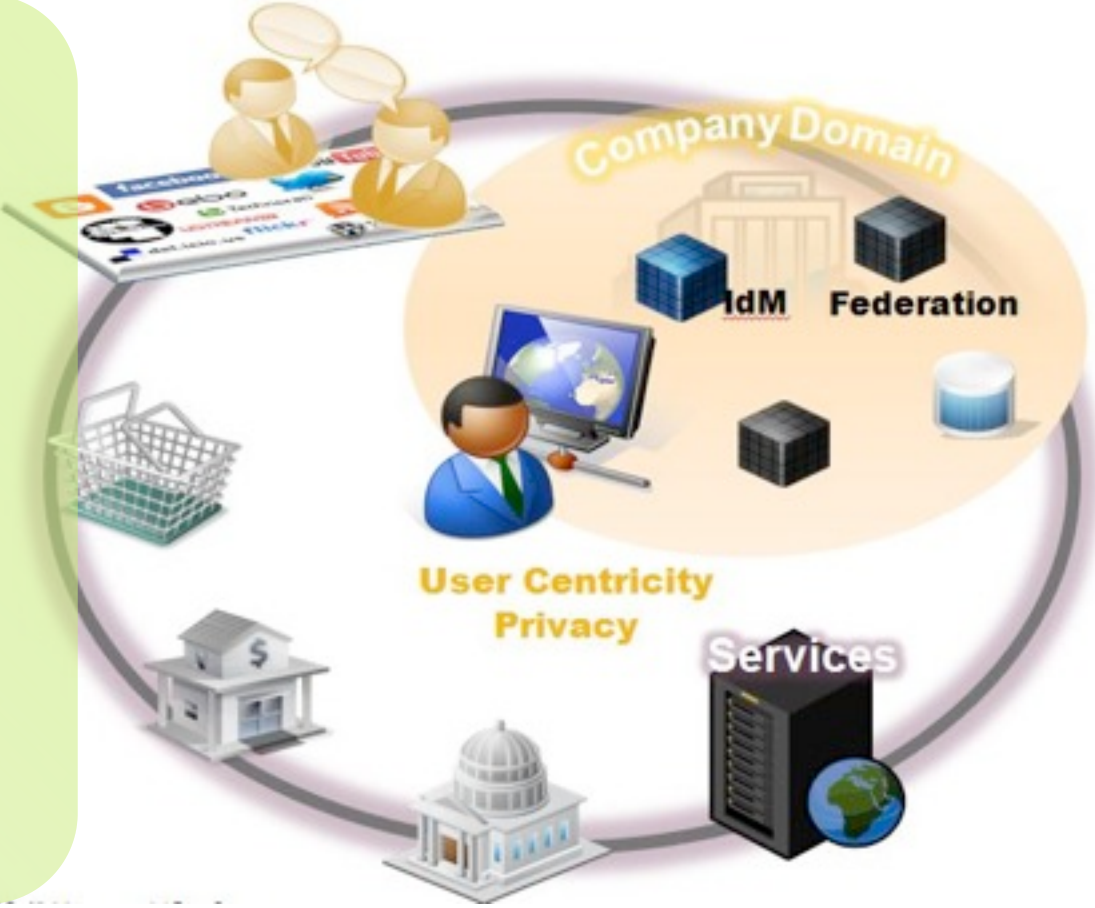
Setting the scene

1. Mario takes a photo of Eve at a conference.
2. Eve agrees on uploading the photo to AISEC's photo gallery service.
3. Before uploading Eve chooses the sticky policy determining who might get access to the photo. Here, default policies are:
   a) *Only the user her-/himself*
   b) *Participants of the conference*
   c) *Internet – free download*
4. According to the policy (a) the photo will be uploaded restricted to Eve's eyes only.
5. Mario's boss checks the gallery for available photos but he cannot see Eve's photo.

Synergetics project:
TAS³ is getting an UMA connector

Trusted Architecture for Securely Shared Services

> “The TAS³ project is working to produce an architecture in which data can be shared and reused securely and safely within a trusted environment. Most importantly, it puts users in control of what happens to their data and allows them to see when and by whom it has been accessed. For more information visit www.tas3.eu or www.zxid.org.



Synergetics is now developing the UMA connector to its end-to-end trust assurance framework, which otherwise focuses primarily on machine-to-machine and deep web service calls

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Web apps that become UMA hosts can easily offer “context, control, choice, and respect”

- You can provide sophisticated protection and sharing of any user content or data that isn’t meant to be fully public
- You can outsource the entire job to third parties (AMs)
- You can ensure that the protection of sensitive resources is stronger than the “private URL trick”
- You can build trust more readily with users who are “privacy fundamentalists”
- You can integrate these features using lightweight OAuth, JSON, HTTP, and REST paradigms and a freely implementable protocol

Identity providers that become UMA AMs can centrally coordinate sharing of anything to anyone

- The separation between IdPs and other attribute providers has long been acknowledged – you can never be the sole trusted source of all interesting user data
- OpenID Connect is solving how you as an IdP can act as a discovery hub for OAuth-mediated access to attributes
- UMA complements it by solving how you as an IdP can now act as an authorization hub for access by "others besides Alice" to:
    - Trusted attributes
    - User-generated content
    - APIs

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