The Three S's Of Distributed Authorization: Safe, Simple, Scalable

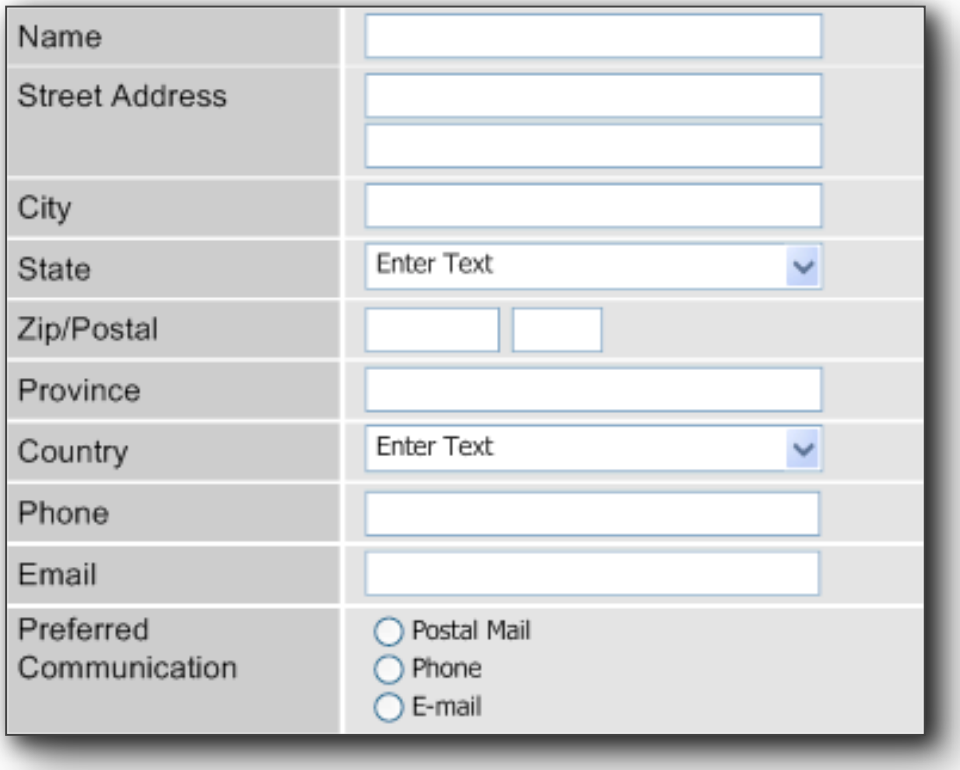
Eve Maler, chair of @UMAWG

tinyurl.com/umawg | tinyurl.com/umafaq

June 14th, 2013

The "data price" for online service is too high: typing…

- Provisioning by hand
- Provisioning by value
- Oversharing
- Lying!



The "data price" for online service is too high: connecting…

- Meaningless consent to unfavorable terms
- Painful, inconsistent, and messy access management
- Oblivious oversharing

The "data price" for online service is too high: private URLs…

- Handy but insecure
- Unsuitable for really sensitive data

Most data "sharing" today is back-channel and unconsented

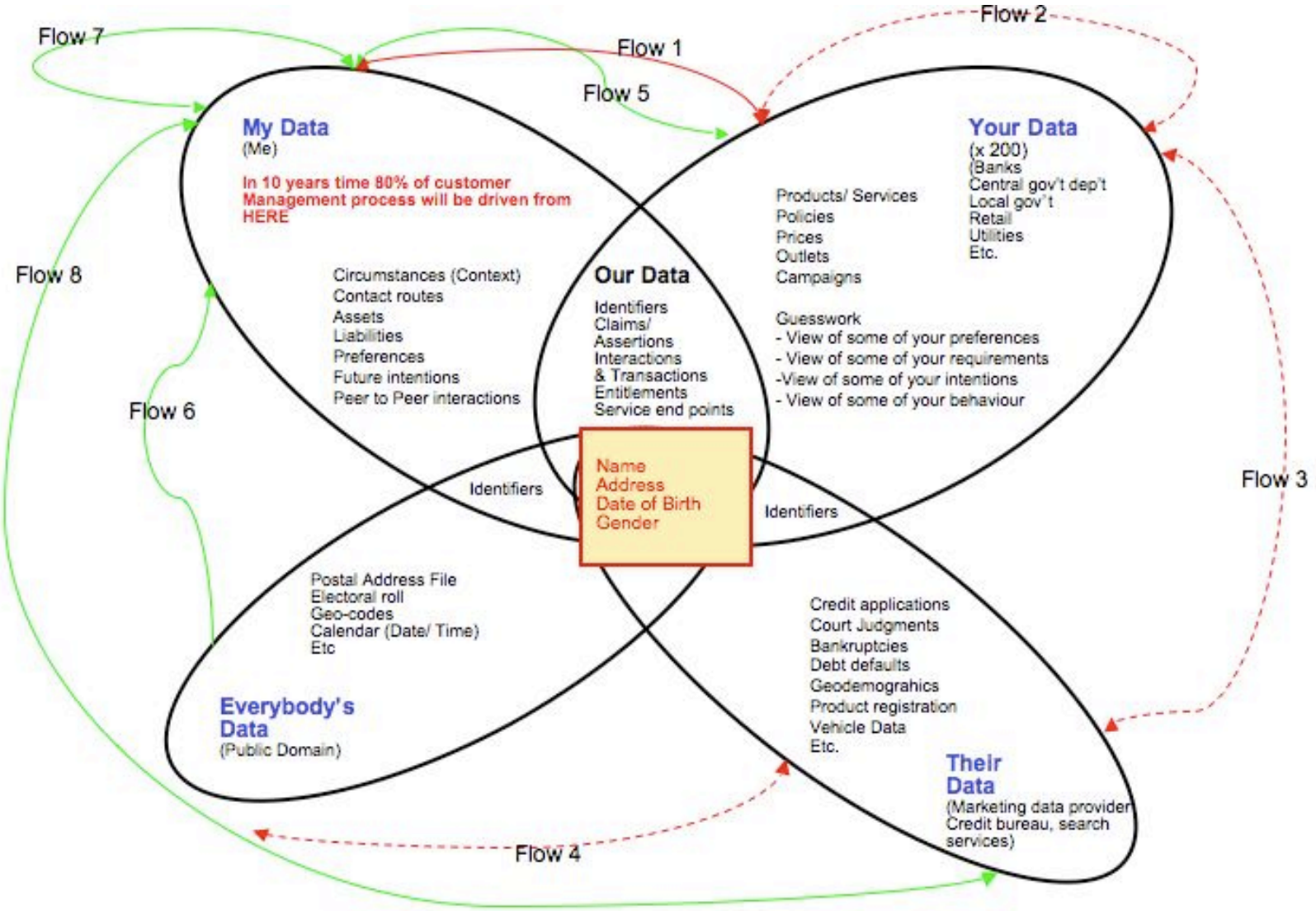


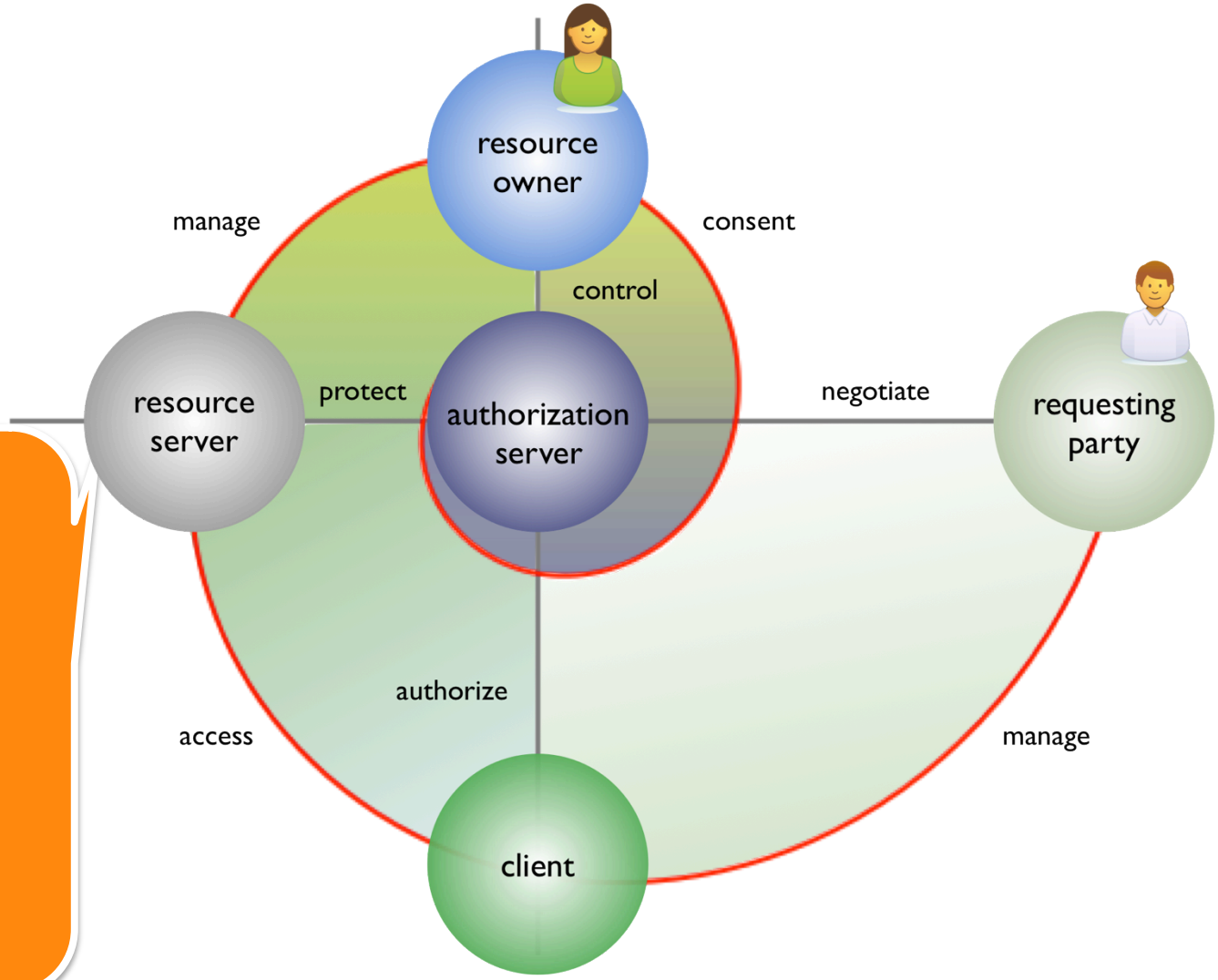
Image source: http://informationanswers.com/?p=283

Privacy is about context, control, choice and respect – so UMA enables a "digital footprint control console"

- *Web 2.0 access control is inconsistent and unsophisticated*
- *To share with others, you have to list them literally*
- *You have to keep rebuilding your "circles" in new apps*
- *You can't advertise content without giving it away*
- *You can't get a global view of who accessed what*

- You can **unify** access control under a single app
- Your access policies can test for **claims** like "over 18"
- You can **reuse** the same policies with multiple sites
- You can control access to stuff with **public** URLs
- You can manage and **revoke** access from one place

UMA turns online sharing into a privacy-by-design solution



- Historical
- Municipal
- Financial
- Vocational
- Artistic
- Social
- Geolocation
- Computational
- Genealogical
- Biological
- Legal
- ...

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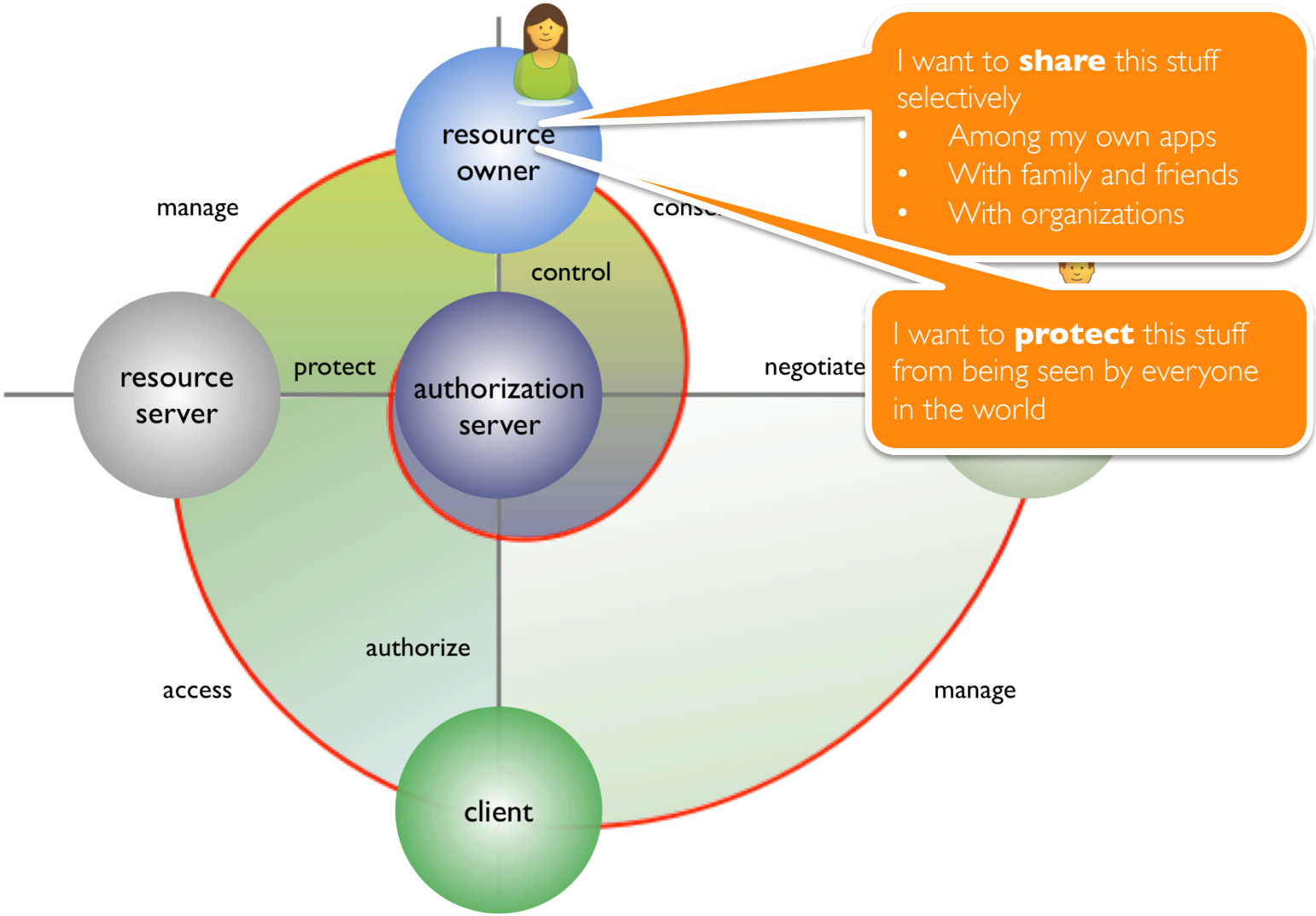

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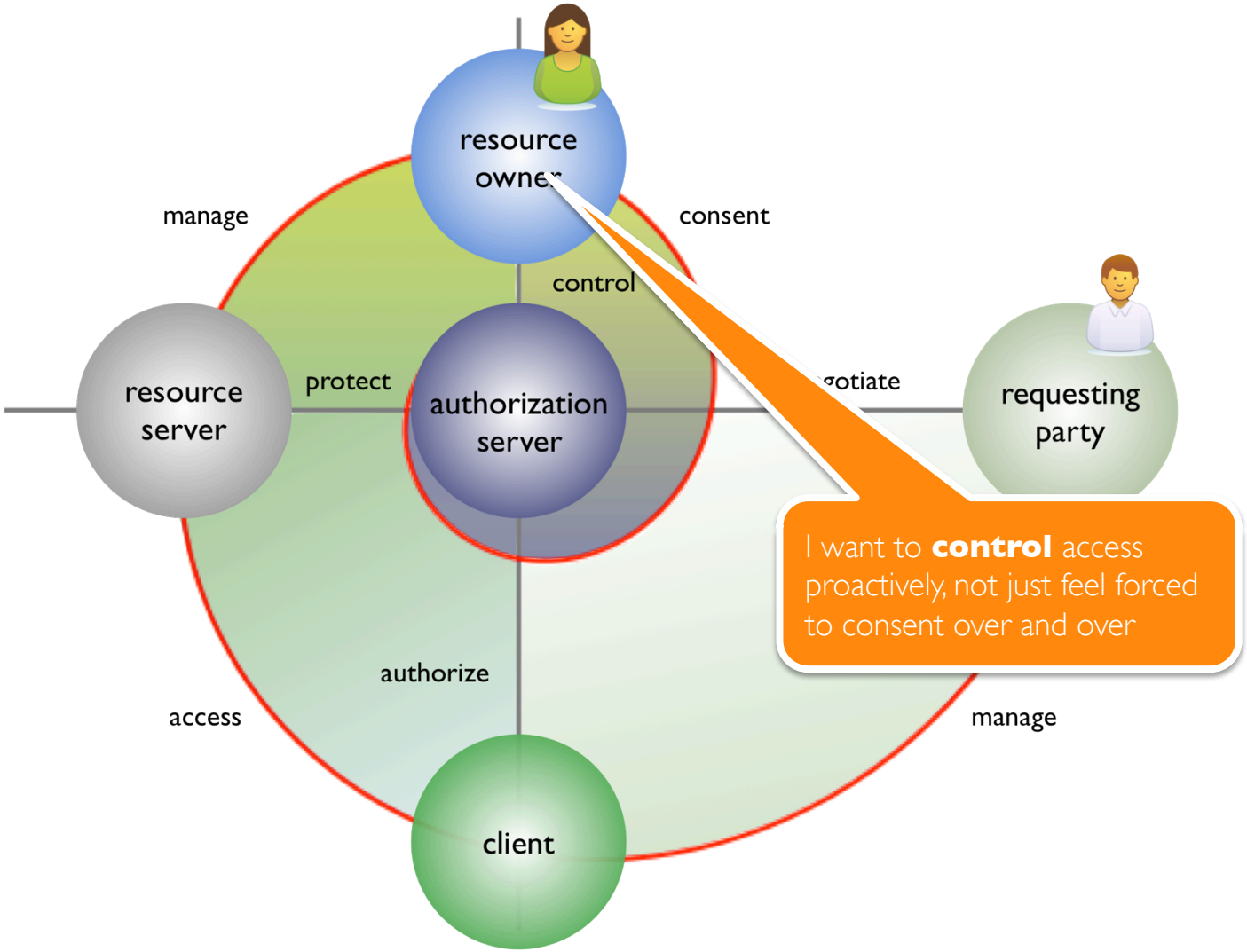
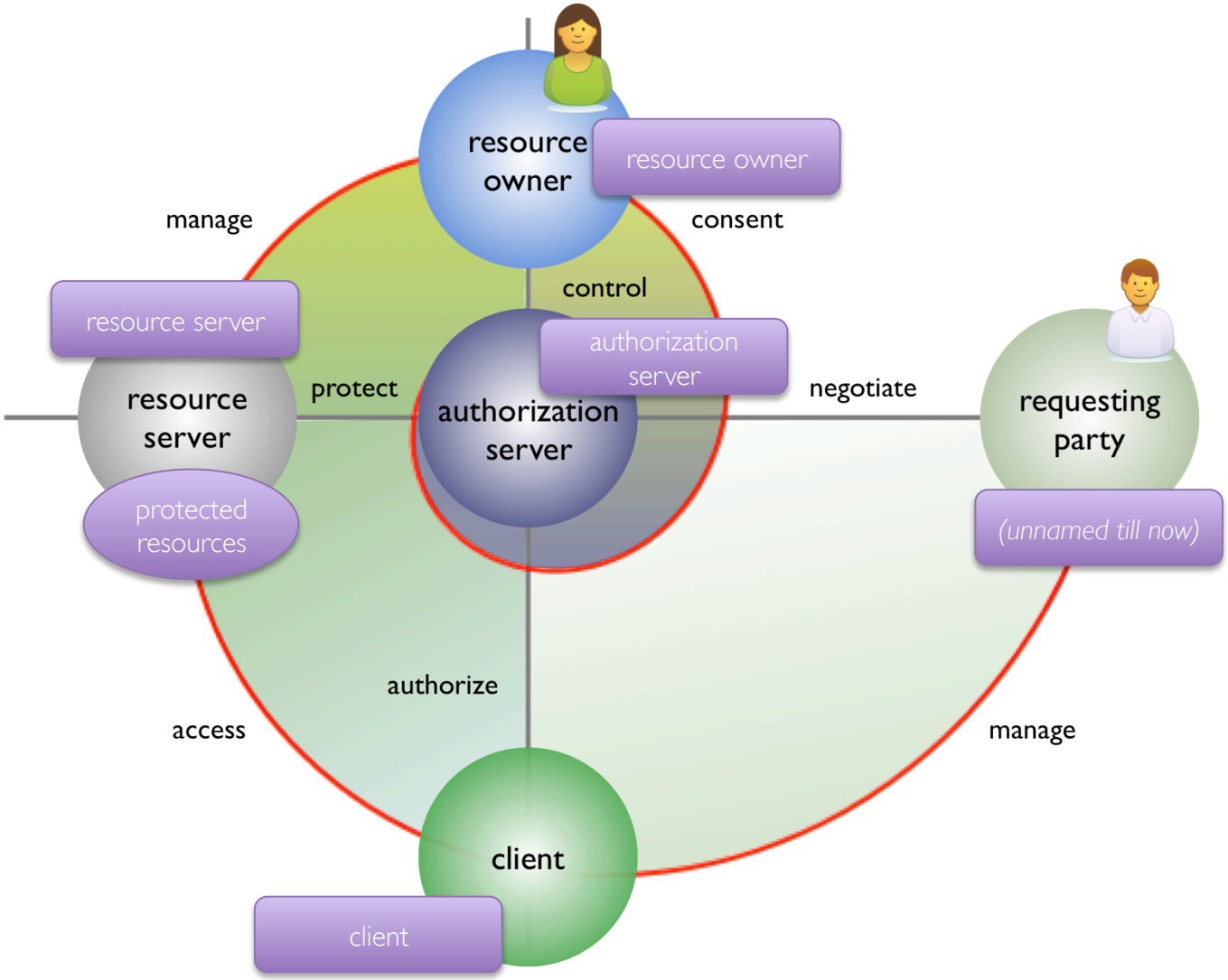
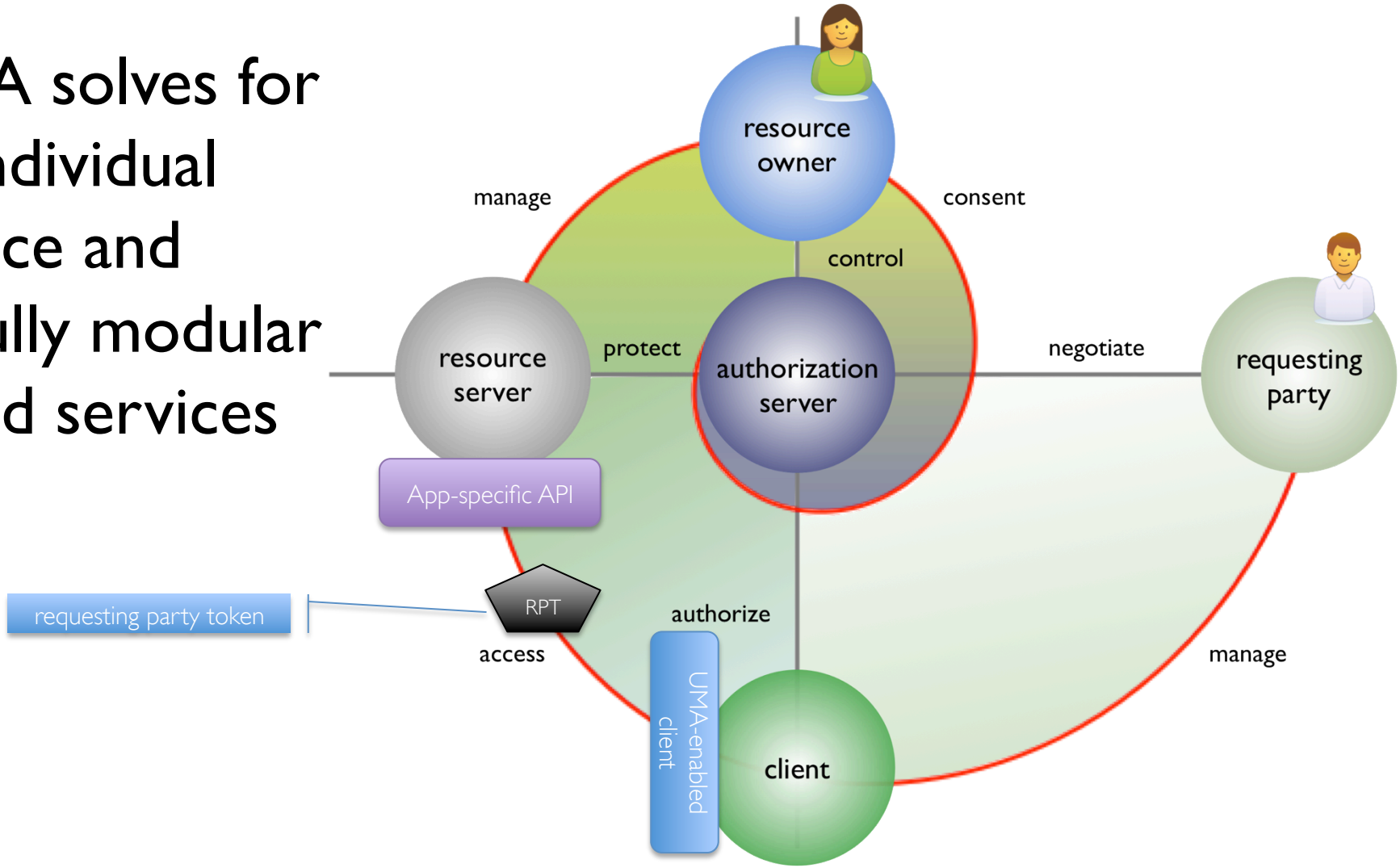


UMA is a profile of OAuth, with bits added for interop and scale



UMA solves for
1) individual choice and
2) fully modular cloud services



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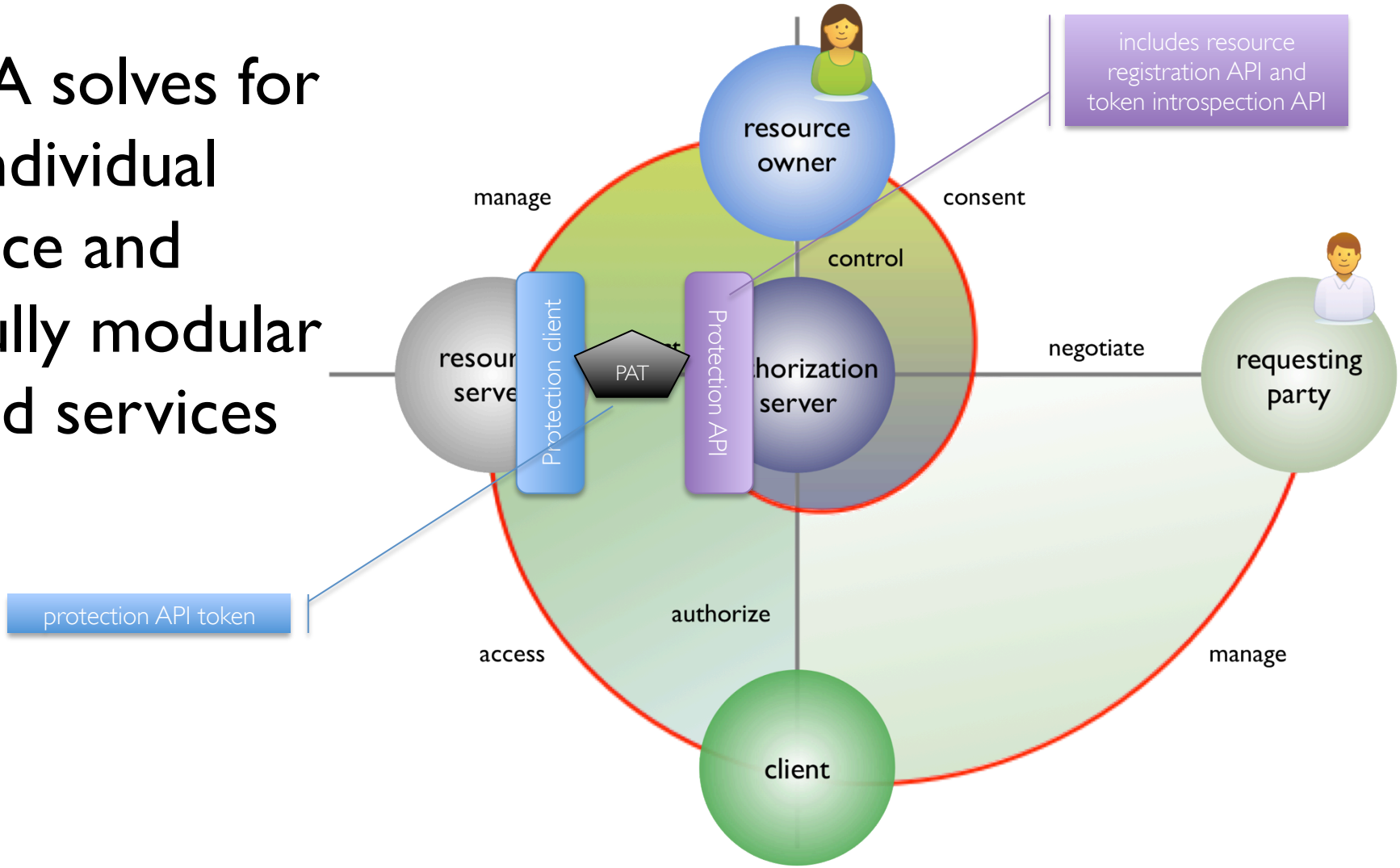

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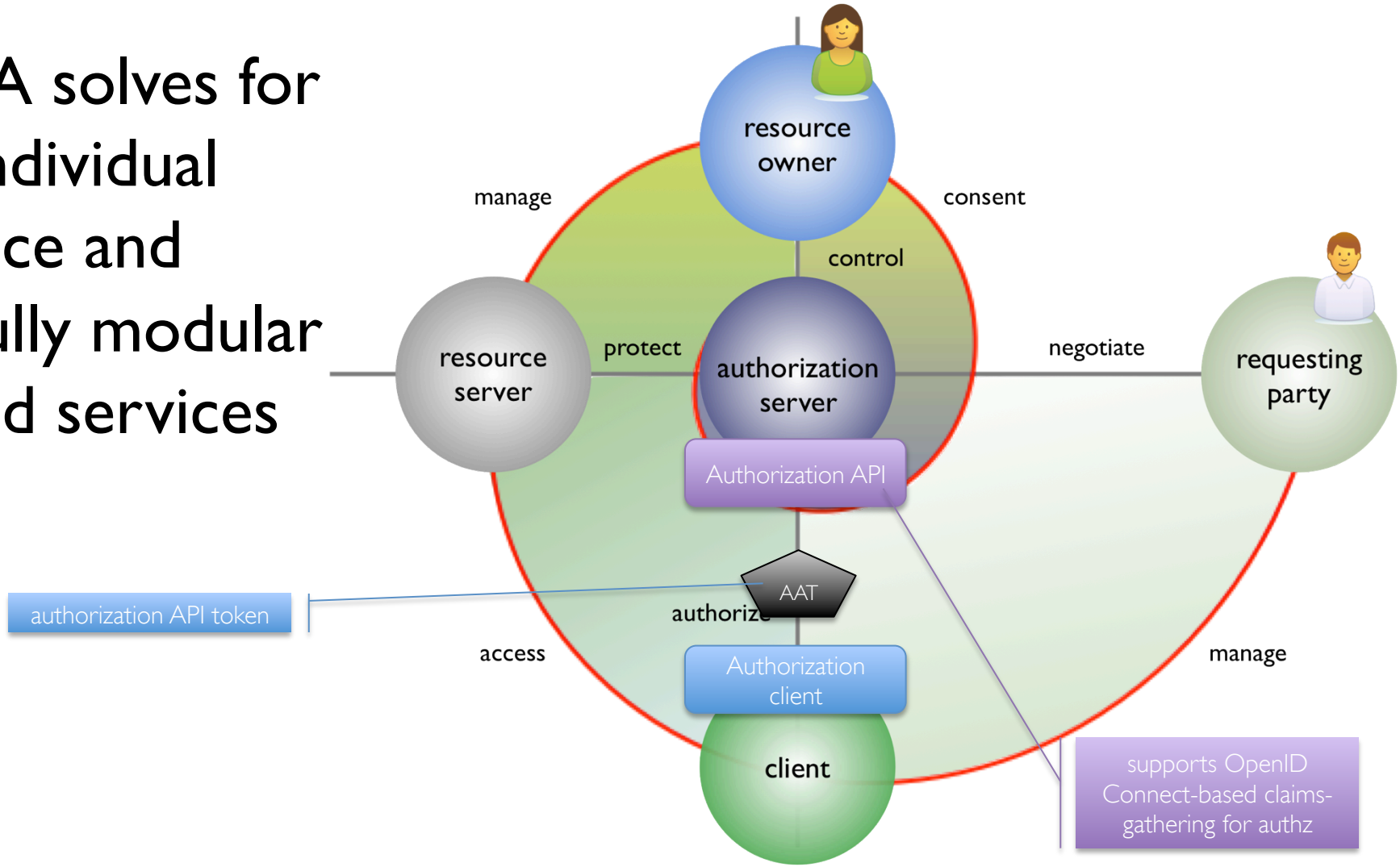
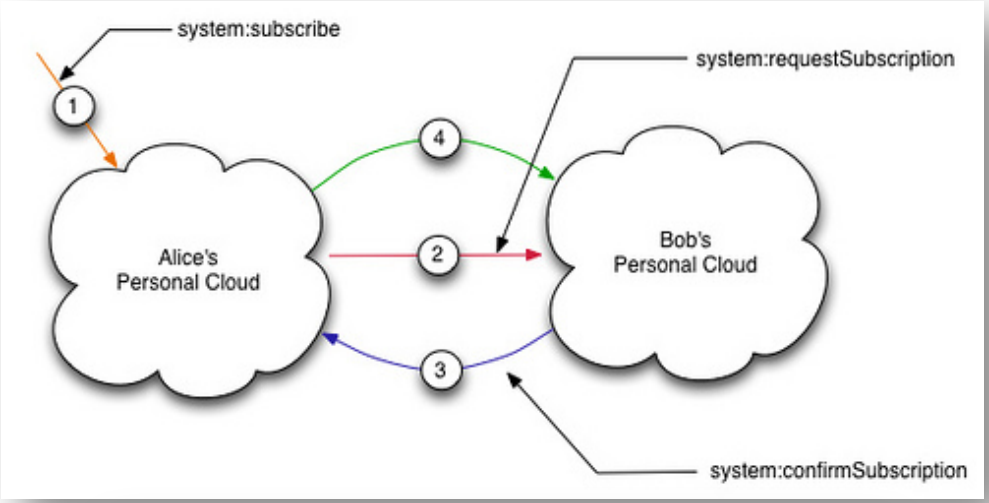
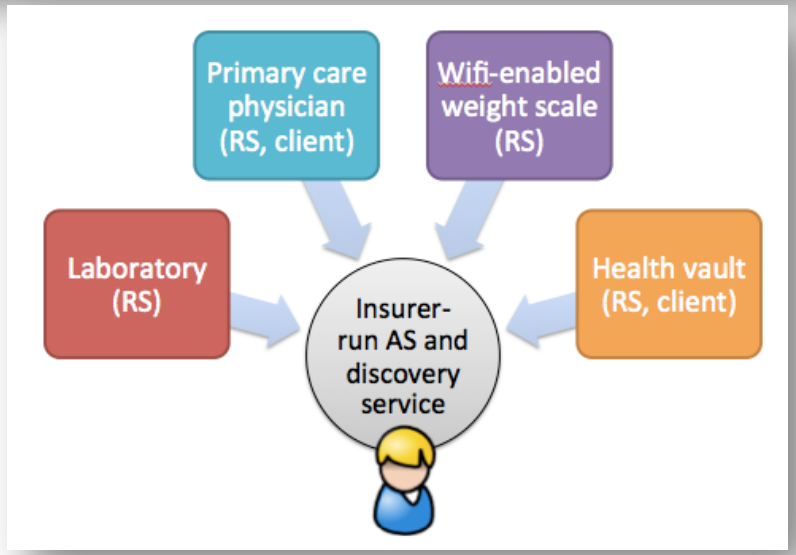


Key use cases

http://kantarainitiative.org/confluence/display/uma/Case+Studies

- Subscribing to a friend's personal cloud
- Sharing accessibility attributes ("GPII")
- E-transcript sharing ("HEAR")
- Patient-centric health data access
- Enterprise "access management 2.0"





Key implementations

http://kantarainitiative.org/confluence/display/uma/UMA+Implementations

- SMARTAM.net (running authorization service from Cloud Identity UK)
- Puma (Python libraries for RS- and client-enabling web apps) from ditto
- Fraunhofer AISEC open-source implementation in Java
- Gluu OX open-source implementation for Access Management 2.0 use cases

Steve Yegge's rant crystallized a key challenge for data sharing

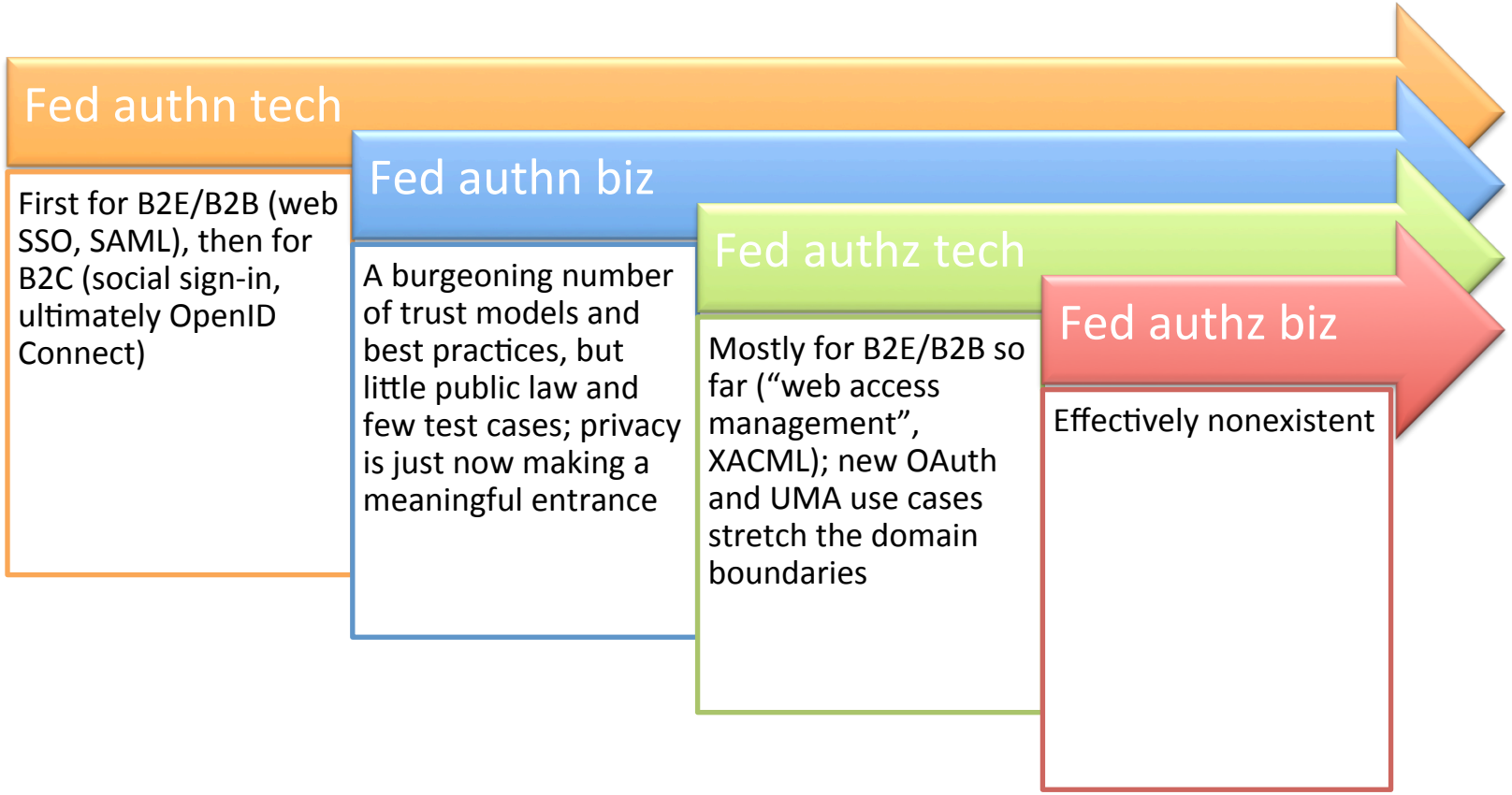
[Jeff Bezos] issued a mandate that was so out there, so huge and eye-bulgingly ponderous, that it made all of his other mandates look like unsolicited peer bonuses… '1) ***All teams will henceforth expose their data and functionality through service interfaces.****'*

Like anything else big and important in life, ***accessibility has an evil twin*** *who, jilted by the unbalanced affection displayed by their parents in their youth, has grown into an equally powerful arch-nemesis (yes, there's more than one nemesis to accessibility)* ***named security.*** *And, boy howdy, are the two ever at odds.*

But I'll argue that accessibility is actually more important than security because dialing accessibility to zero means you have no product at all, whereas ***dialing security to zero can still get you a reasonably successful product*** *such as the Playstation Network.*

We're finally getting around to loosely coupled identity in steps

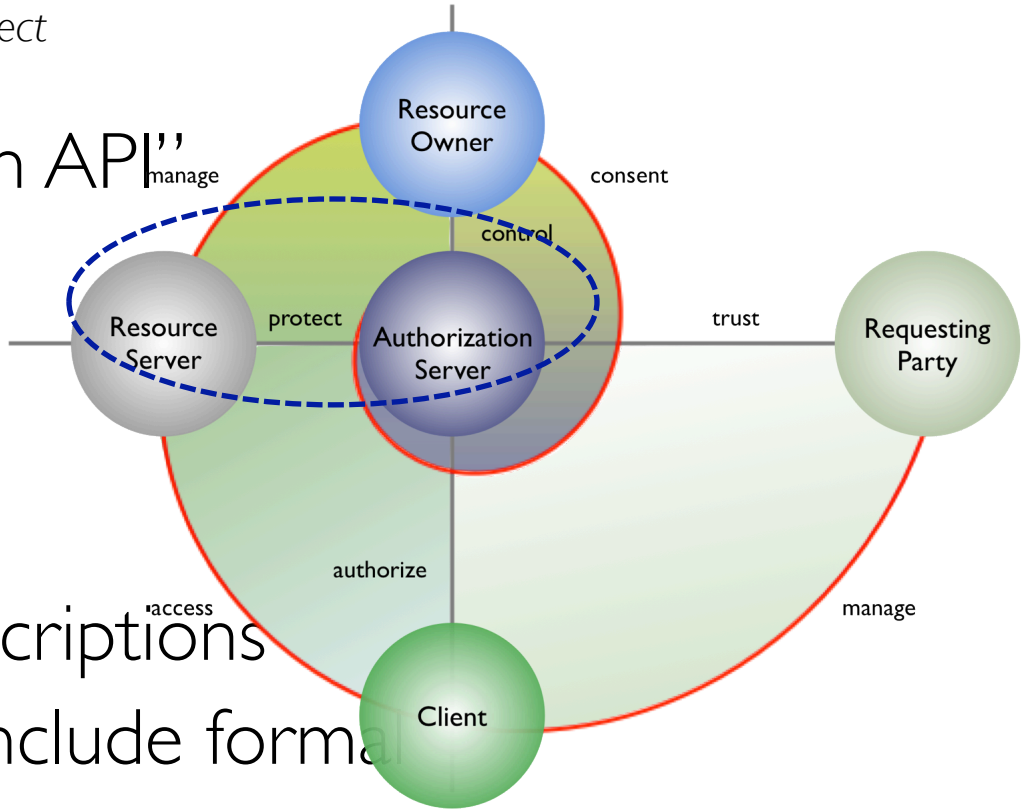
…but we're often not deeply protected when we do it



A technical innovation: machine-readable scope descriptions

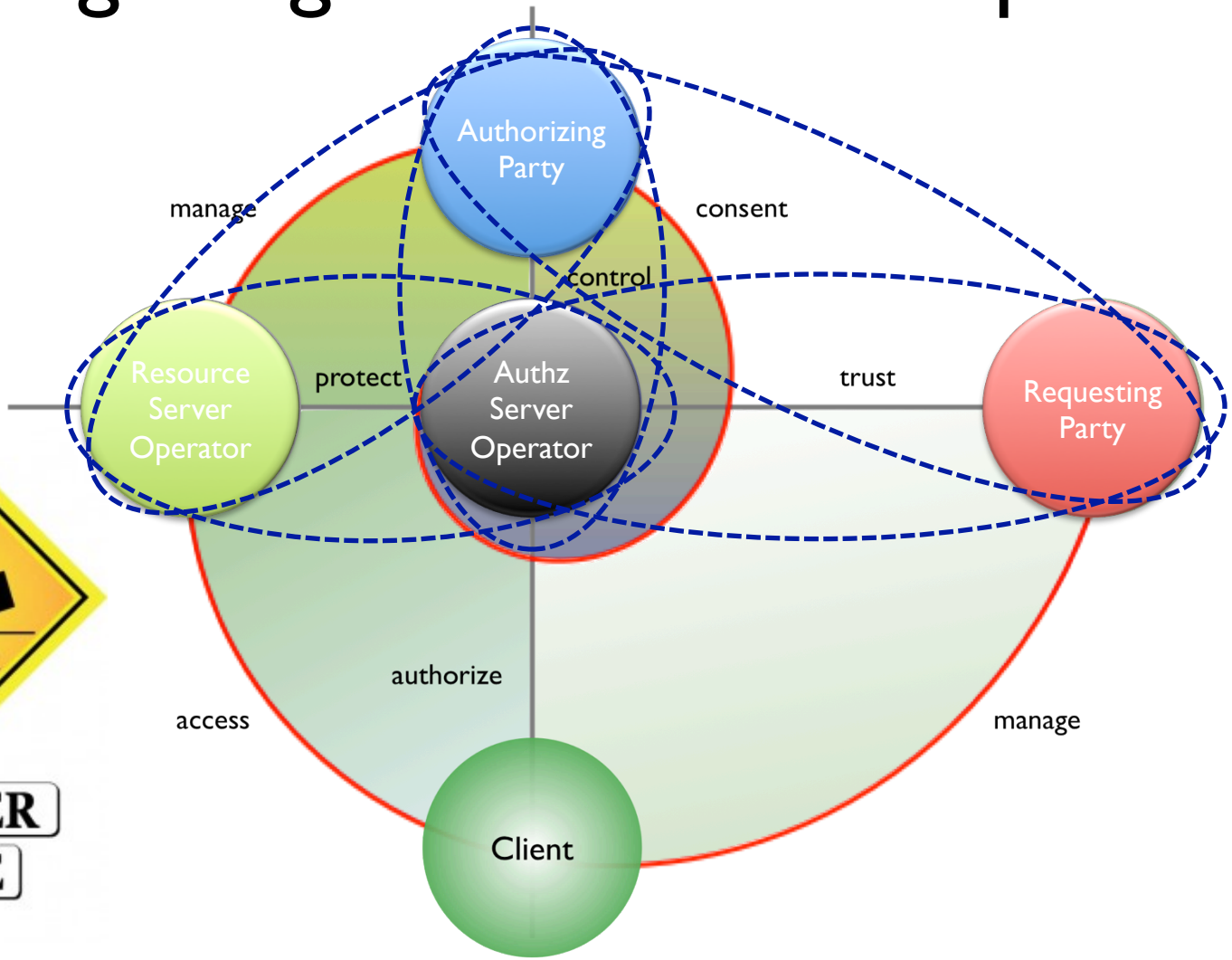
(now modularized so OAuth and OpenID Connect can potentially use this feature too)

- AS presents "protection API"
- RS makes calls to it to register resources for protection, along with their scopes
- Scope IDs point to descriptions
- Dazza G's innovation: include formal terms of authz in them




```
{
  "name": "View",
  "icon_uri": "http://www.example.com/icons/reading-glasses"
}
```

A business innovation: enabling "binding obligations" between parties



Obligations are tied to auditable changes of protocol state

- Phase 1: protect resources
  - Obligations revolve around the introduction of the AS and RS
  - The state change: issuance of a "protection API token" for OAuth-mediated access to that API
- Phases 2 and 3: get authorization and access resource
  - Obligations run the gamut of types and state changes
  - The two key ones:
    - Requesting Party-Authorizing Party: Adhere-to-Terms
    - Authorizing Party-Requesting Party: Adhere-to-Terms
    - Scope terms of authz can be surfaced up into this agreement if the AS requests a **claim** that confirms consent

Next steps

- We're working on optimization opportunities when UMA, OpenID Connect, XDI, etc. are used together
- We will issue an "Implementor's Draft" by ~end of summer
- We have liaison relationships with projects in the "trusted identities in cyberspace" ecosystem
- We are profiling and working to pilot UMA for higher ed, accessibility attribute sharing, and healthcare use cases
- We welcome your involvement and contributions
  - Become an UMAnitarian!
  - Follow @UMAWG on Twitter and UserManagedAccess on Facebook

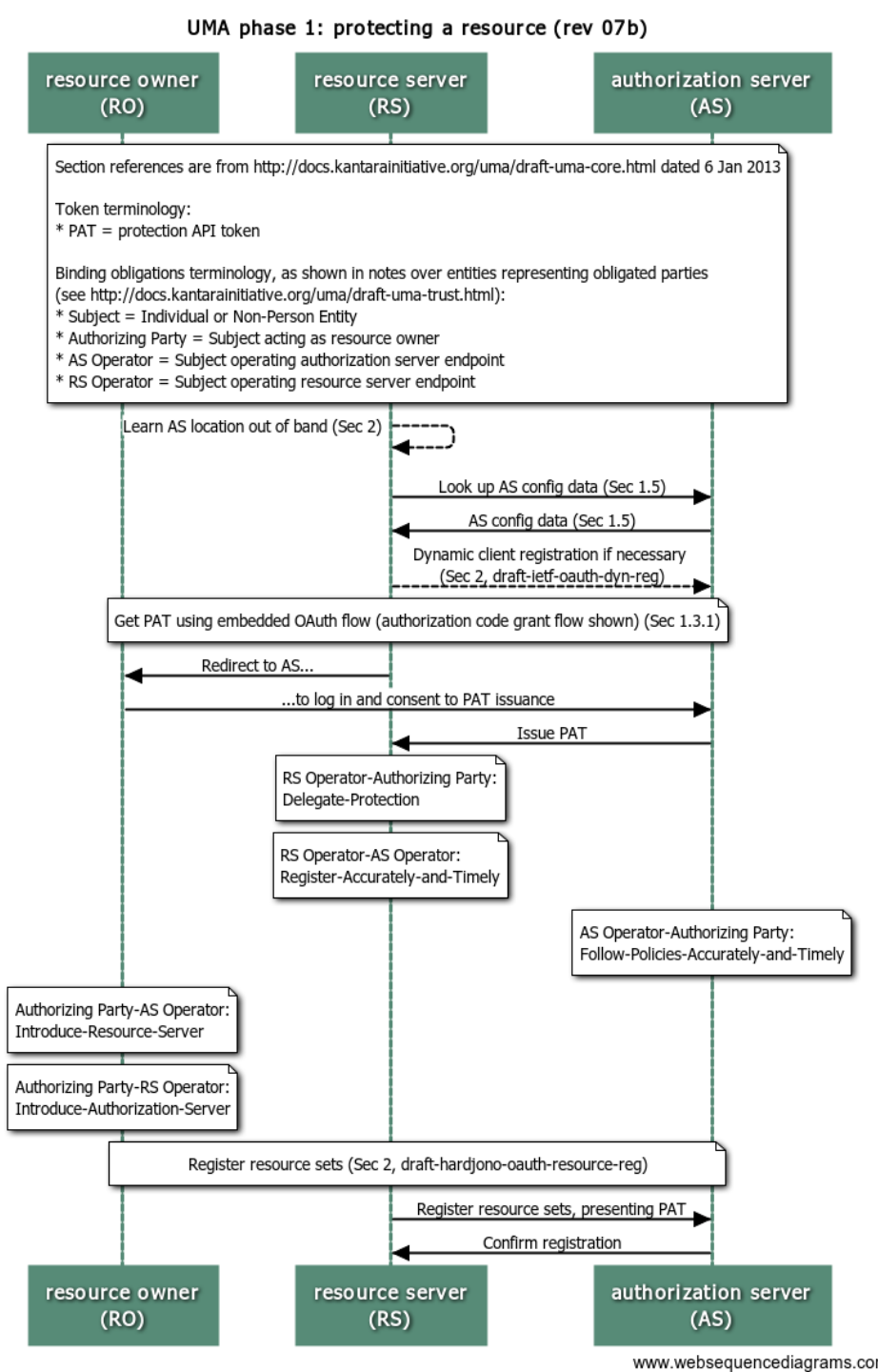
Questions?
Thank you

@UMAWG

tinyurl.com/umawg | tinyurl.com/umafaq

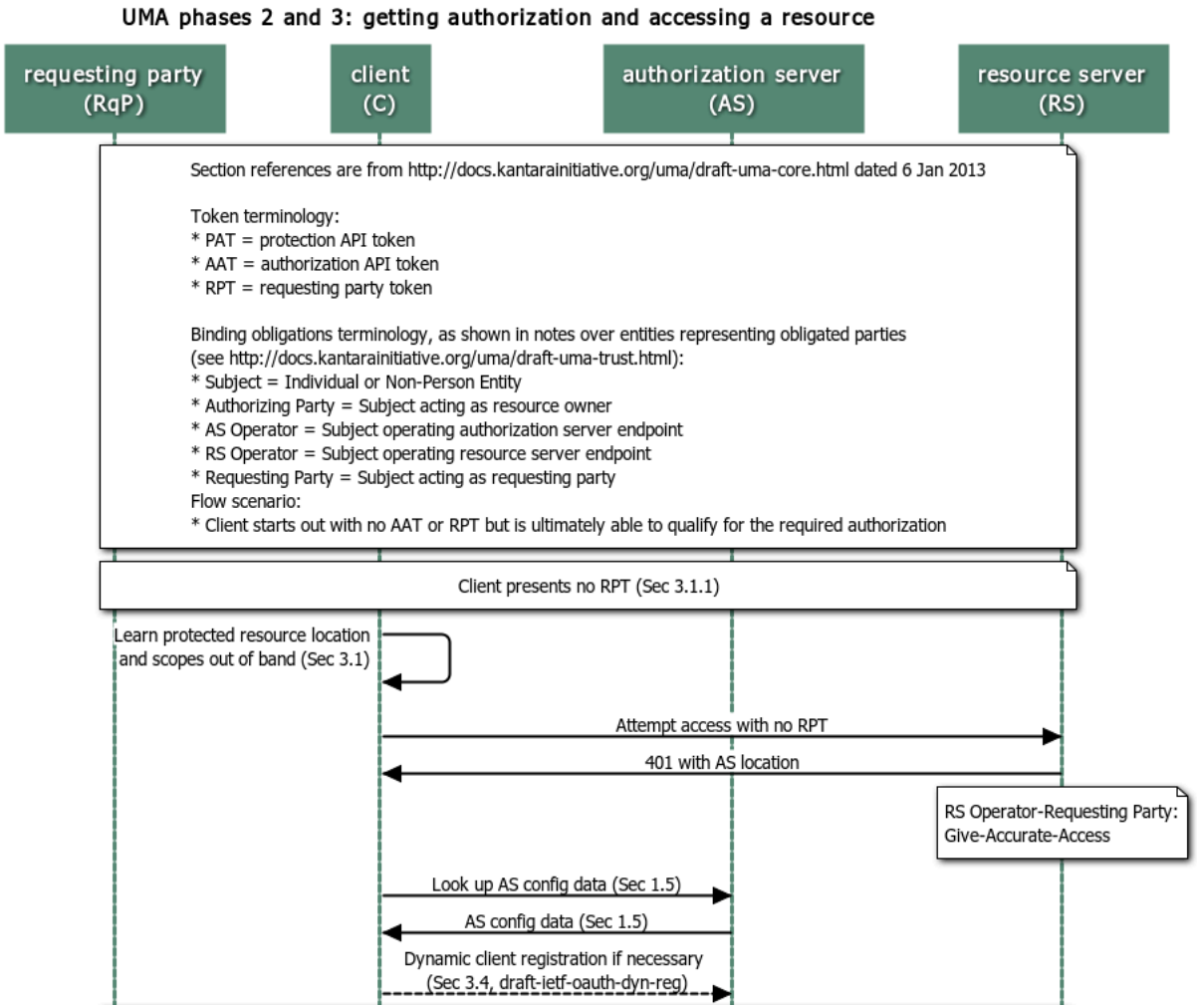
IIW 16, May 2013

Phase 1: protect a resource



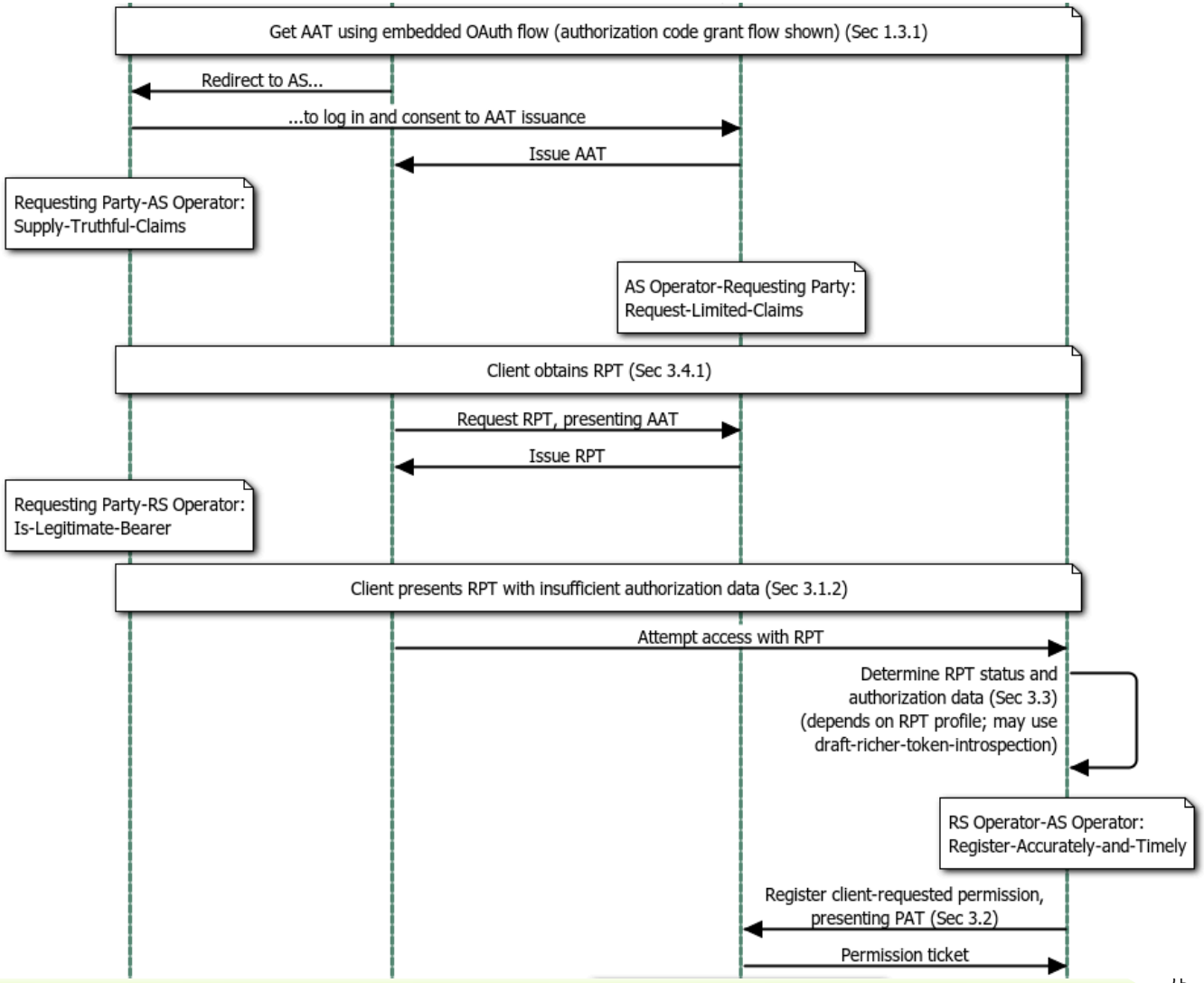
Phases 2 and 3: get authorization and access resource

1 of 3



Phases 2 and 3: get authorization and access resource

2 of 3



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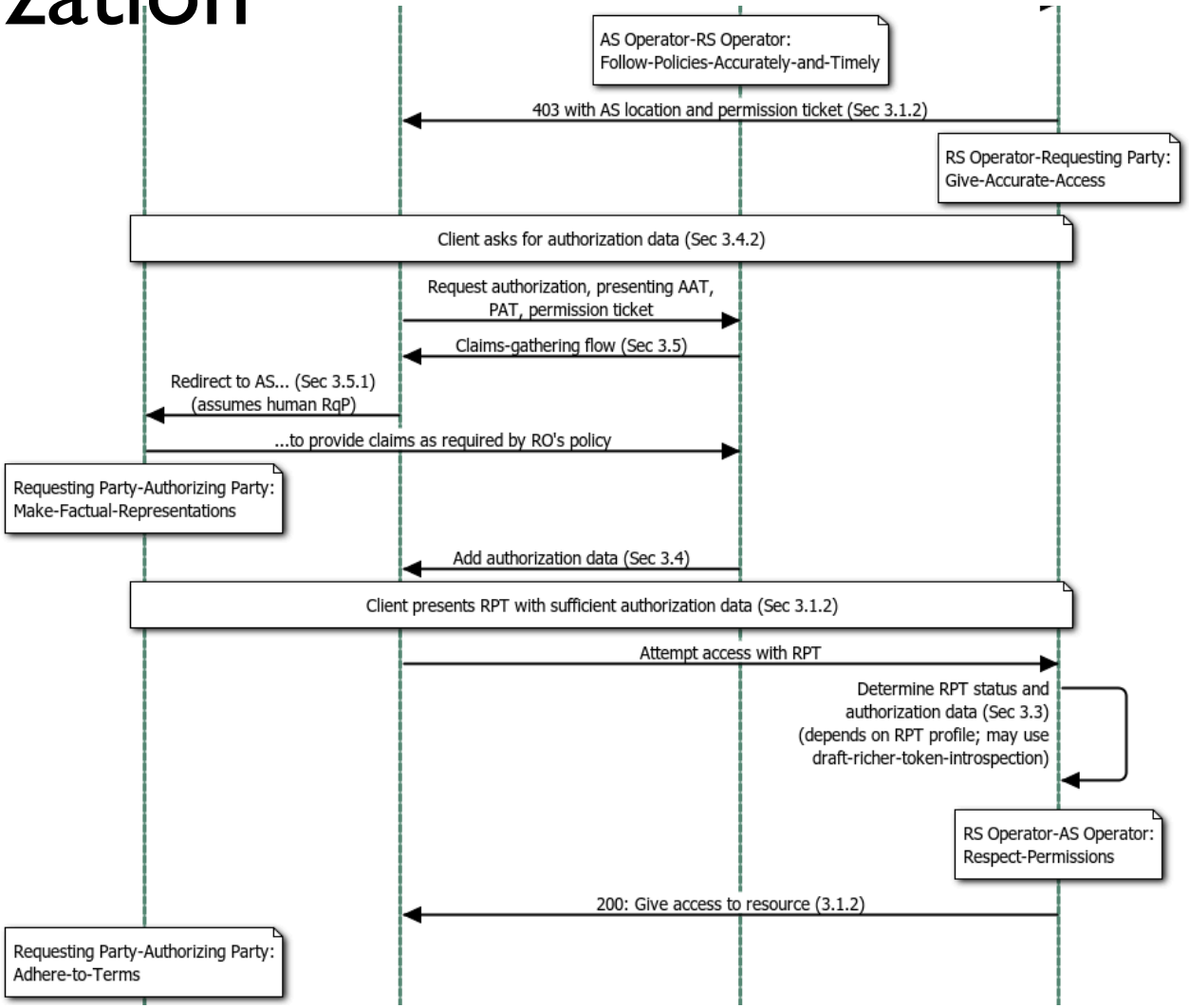
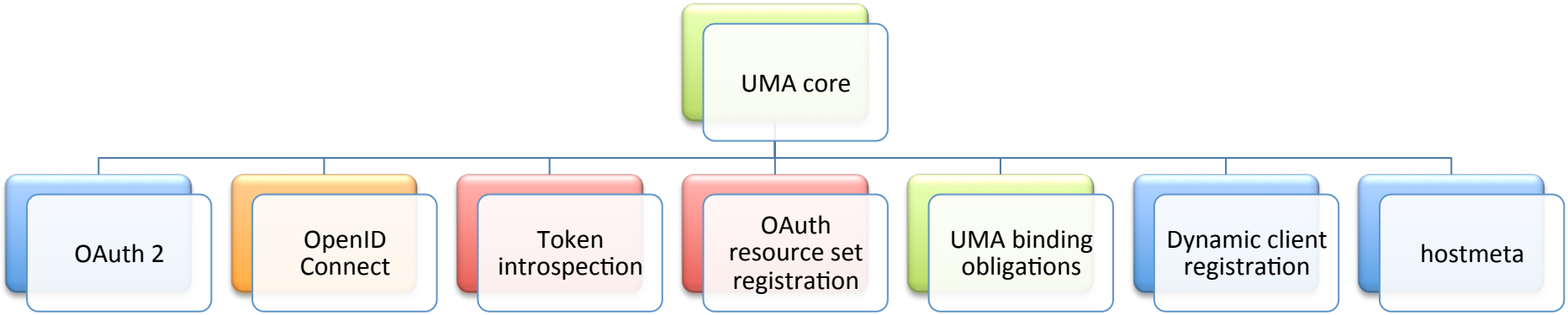


Spec call tree for the UMA profile of OAuth



UMA native spec

Required external component

Optional external component

Individual IETF I-D