EUDAT Federated AAI TF

(Authentication Authorization Infrastructure Task Force)

EUDAT WP5

Slides by Jens Jensen+AAITF

Presented by Claudio Cacciari (c.cacciari@cineca.it)

SEVENTH FRAMEWORK PROGRAMME

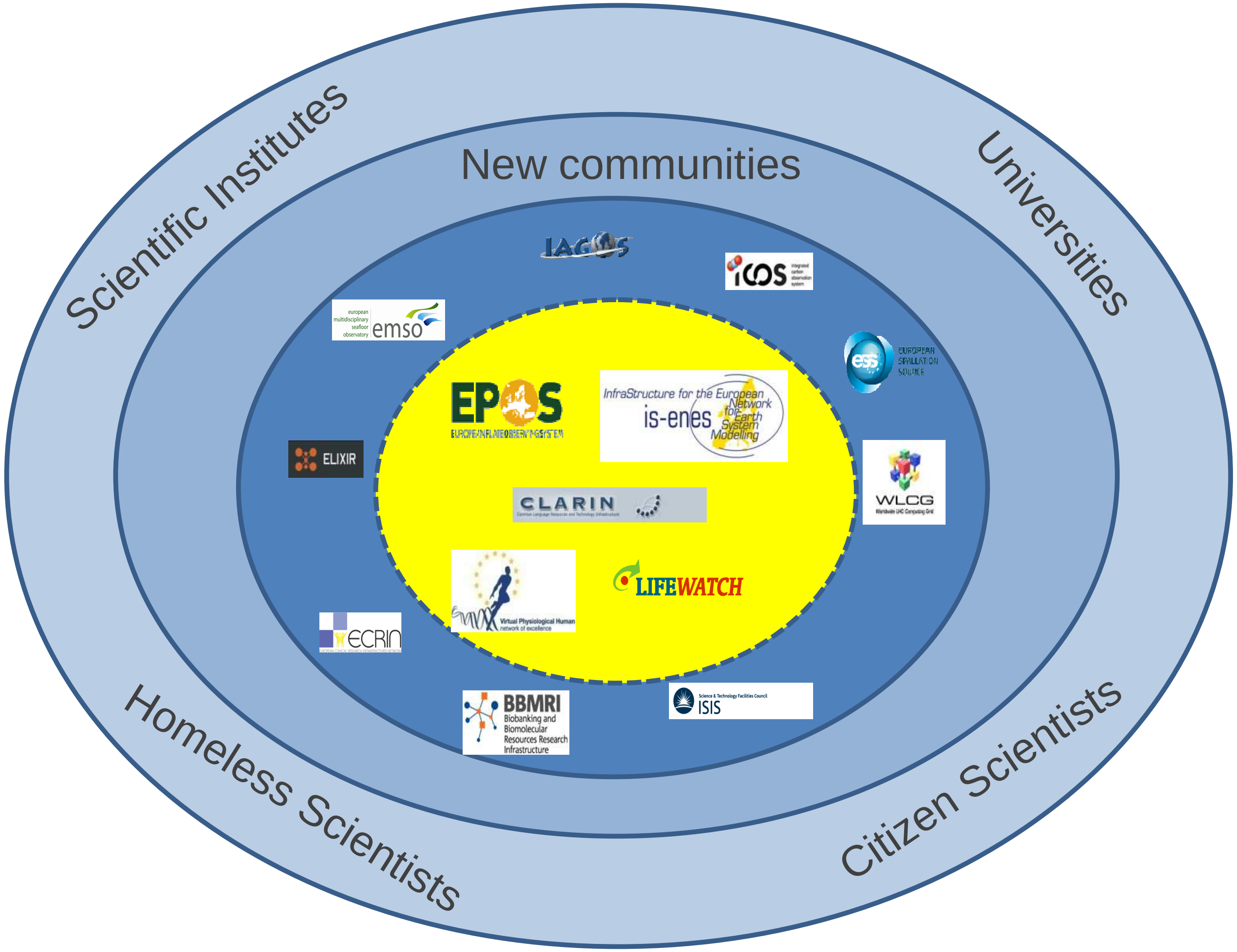
EUDAT

Date:2012/03/08

Outline

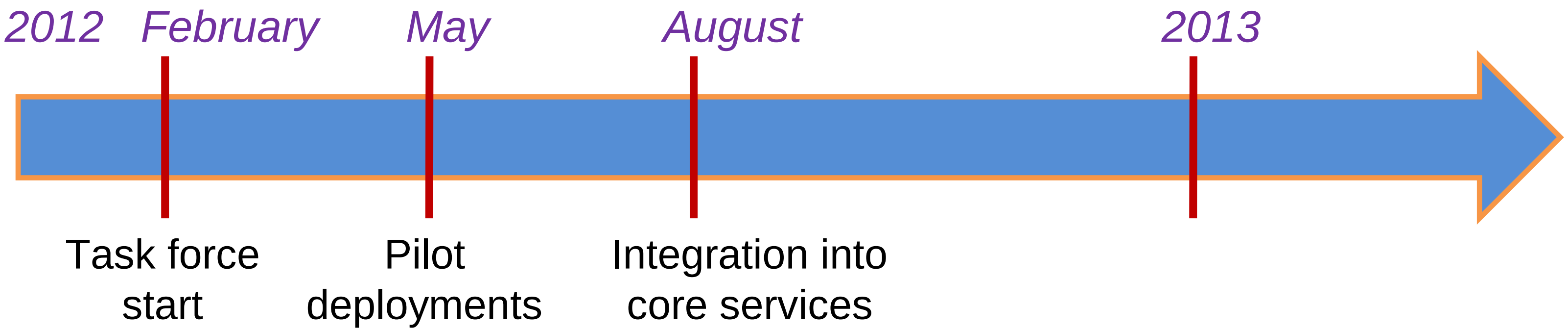
- Background
- Task force work plan
- Community’s benefits & issues
- Authentication and Authorization process
  - Actors
  - General overview
- Options
- Challenges

Background


Scientific Institutes
New communities
Universities
IAGOS
ICOS
emso
ess
EPOS
is-enes
ELIXIR
CLARIN
WLCG
LIFEWATCH
Virtual Physiological Human
ECRIN
BBMRI
ISIS
Homeless Scientists
Citizen Scientists

Task force work plan

- A task force dedicated to AA has been created to:
  - Provide expertise
  - Design the AA infrastructure



2012 February May August 2013

Task force start

Pilot deployments

Integration into core services

  - First phase (Feb-Aug)
    - Starting with internal EUDAT core communities (ENES and CLARIN) 01.05.2012
    - Starting with most mature services (internal collaboration services, data transfer services) 31.07.2012
  - Second phase (Aug)
    - Extending the interaction to all interested communities
    - Involving a wider range of services

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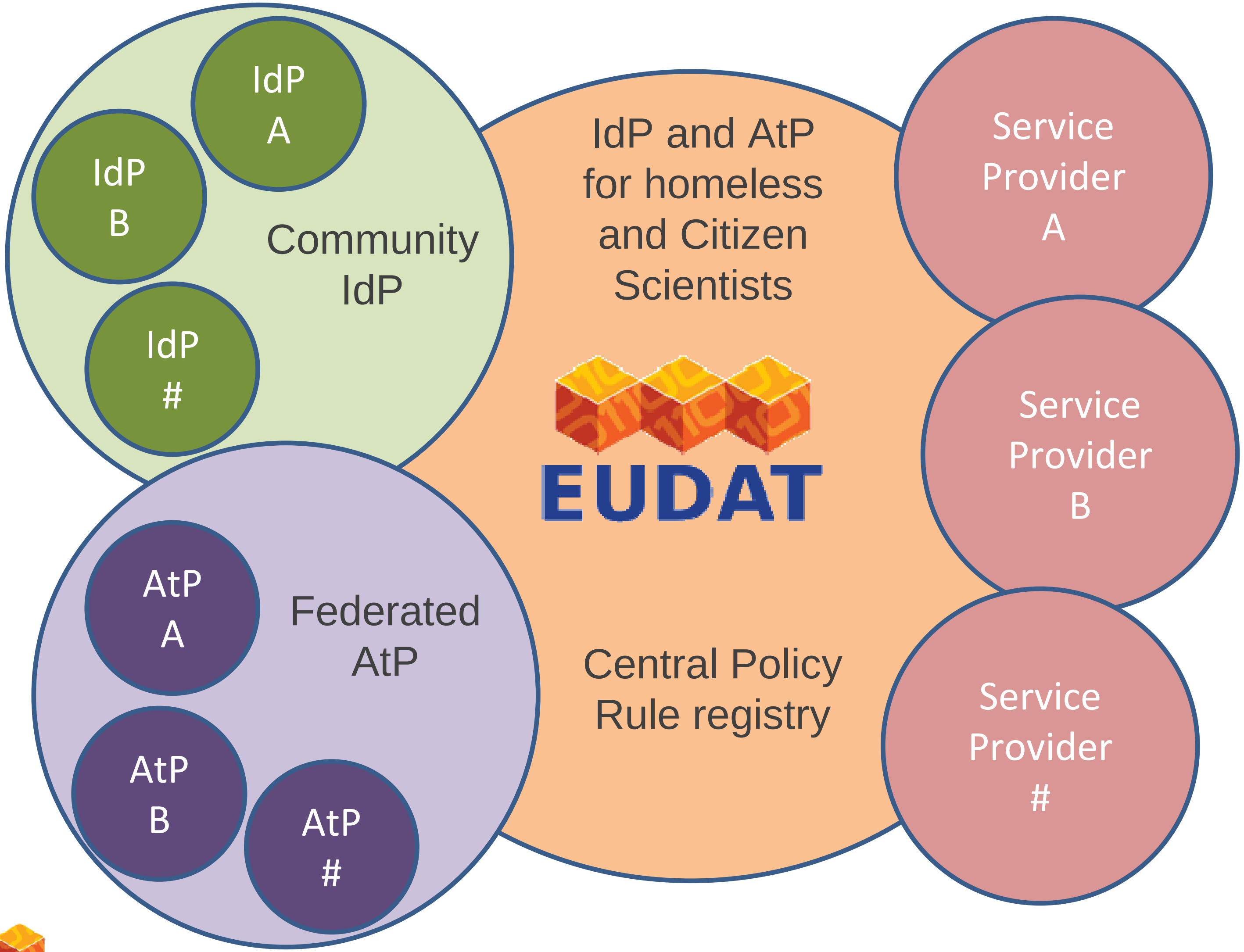
Community’s benefits & issues

- Expected benefits of a federated AA infrastructure:
  - access to a wider range of services and increased collaboration opportunities.
  - decrease the cost associated to the user account management.
  - increase the level of security (establishing Level of Assurance, network of trusted IdPs …).
- Potential issues:
  - change of the policy to consider identity federation.
  - user’s sensitive attributes could be required.

AA process’actors

1. Federations
2. Multiple IdPs (e.g. home institute IdP)
   - Provision for supporting “homeless” users, cf SWITCH
   - Attributes from home institute
   - Technology – IdPs should use the same technology
3. Attribute authorities
   - Attributes relating to collaborations/communities (e.g. roles, memberships)
   - Each community should be prepared to manage and publish the user attributes
4. Multiple service providers
   - All consuming the *same* identities and attributes
   - Single Sign on: single IdP

EUDAT High Level Organization



Federations

- Policies: practices for participants
  - Who can be a member
  - Levels of assurance
  - PII
- Directory/information: who’s who
- Roots of trust
- Processes for adding/removing participants
- Support
- Monitoring/statistics
- Other federation level services (e.g. credential conversion, accounting, fed. level attrs.)

Identity Provider Requirements

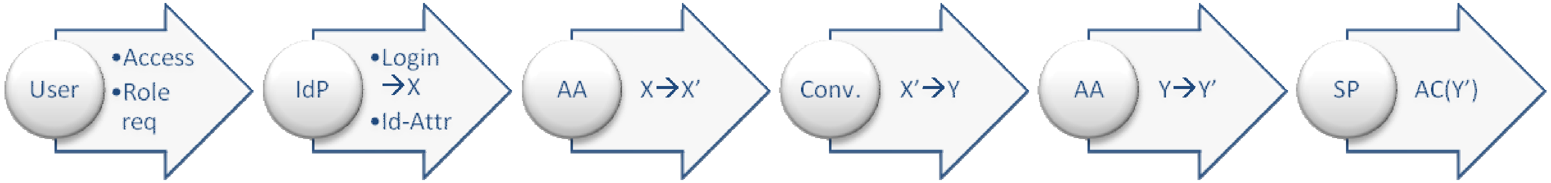
- Identifiers MUST be personal
  - – Attributes assigned to identity = individual
- MUST provide persistent identifiers
  - – E.g. DN, eduPersonTargetedID
  - – No recycling of IDs: MUST be allocated uniquely

Attribute Authority

- Run for/by communities
  - Scope = communities
  - IGTF best practices for AA
- Personal attributes
  - Data protection rules
  - User acceptance (once?)
  - Tied to identity
- The meaning of attributes
  - Not necessarily consistent across federations, or even within a fed, or even in a single AA ☹
  - Future work...

AA process: general overview

Some steps are of course optional



User
- Access
- Role req

IdP
- Login →X
- Id-Attr

AA X→X'

Conv. X'→Y

AA Y→Y'

SP AC(Y')

Technology

- Within the federation
  - **Shibboleth** (Web), **Moonshot** (Non Web)
  - eduRoam (based on **RADIUS**: Remote Authentication Dial-In User Service)
  - **User certificates**, **OpenId**
  - **XACML** (eXtensible Access Control Markup Language)
  - **Oauth2** (Google, Facebook, Microsoft)
- Outside the federation
  - Credential conversion: special SP to create "external" credential

Options

- Join one or more existing federation(s)
  - Must comply with fed policies
  - Not always easy beyond national level
- Use IdPs from one (or more) existing federations
  - No control over IdPs, but they comply with known policies
  - Lowest common denominator problem
- Superfederate (cf. eduGain): WFAYF (Which Federation Are You From)
  - Baseline may be quite low

Challenges

- Leveraging existing identification systems
- Establishing a network of trust among the AA actors: IdPs, SPs, Attribute Authorities, Federations
- Attributes harmonization: it is necessary to agree on a common way to interpret different set of attributes.

Proposal 1

- Use WFAYF to Shibboleth federations
  - Use fed portal for initial login
  - SWITCH-type homeless IdP
  - Ignore policy requirements in short term?
- Optional: create certificates on-the-fly
  - Hidden from users, obviously
  - Needs fed level services, but ties into things-that-use-certs
  - Needs delegation mechanism, about ~4 options

Proposal 2

- Consume multiple credentials in front end
  - Support both portal and CLI
  - OpenID supported (ENES-friendly)
- Create credentials on the fly (cf Contrail)
- Fed-level attributes (only) initially
  - But can ingest from other sources

Additional Activities

- Track attribute (non-)harmonisation efforts
  - E.g. attribute translation matrix
  - Or genuinely deliver core attributes (e.g. nailed down subset of eduPerson – but you may not get it from IdPs)
  - Nail down attributes between communities – which is possibly possible
- Track related technology
  - E.g. Moonshot
- And Federations at the right scope
  - eduGain, eduRoam, ...

Additional Activities

- LoA
- Performance/scalability testing
- Determine (super)federation baseline policies
  - And whether they match requirements
  - Can we work around it when not?
- Test with Real Users(tm)