

# **AGAST authorisation: de-, de-, decentralise**

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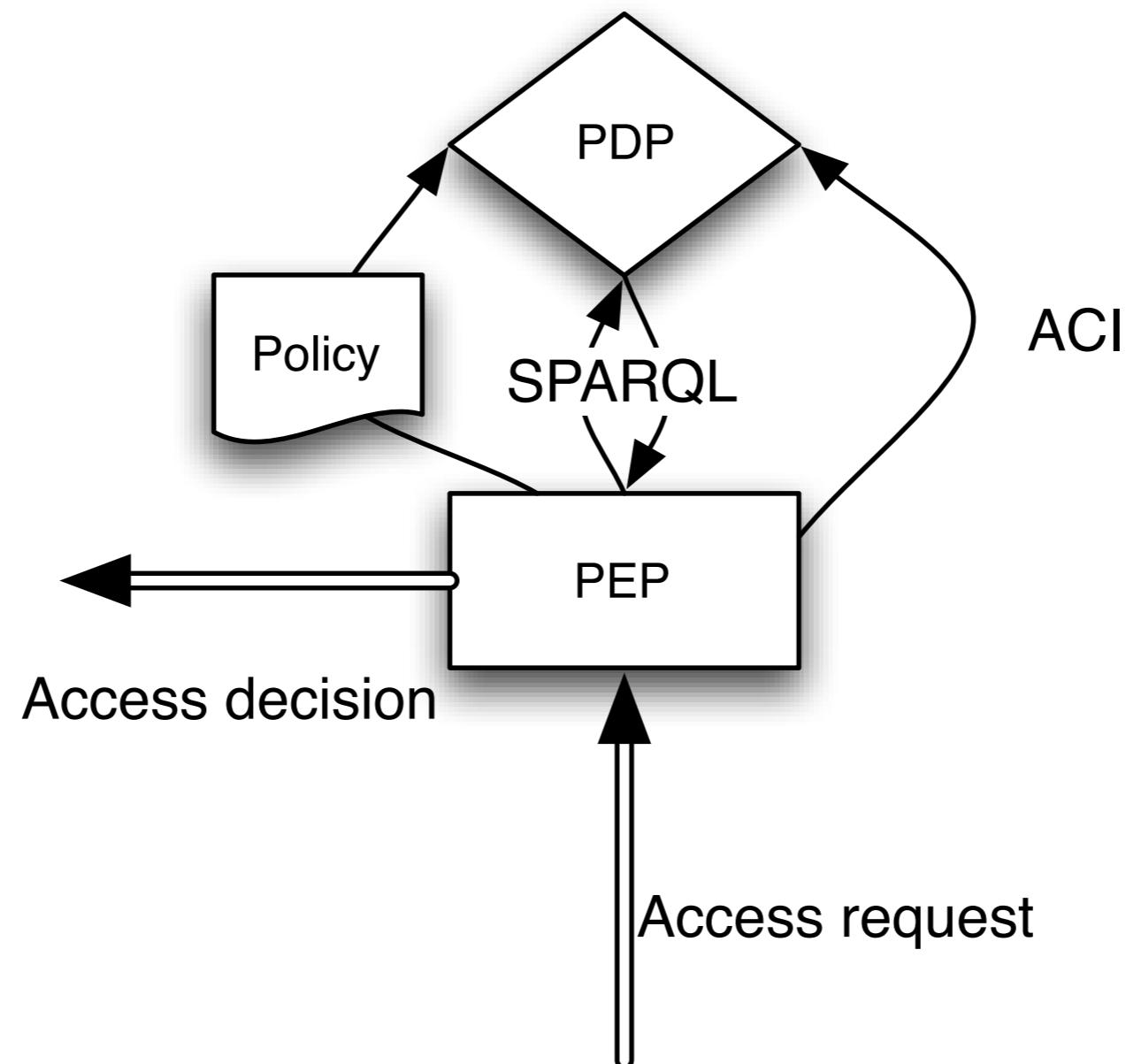
**JISC**

- JISC funded, to March 2009
- Norman Gray & Jeff Lusted, at Leicester; Richard Sinnott & Tom Doherty at NeSC Glasgow
- To produce use-cases (astronomy, bioinformatics, nanoelectronics and others), and prototype PDP implementation
- <http://www.nesc.ac.uk/hub/projects/agast/>

- Advanced Grid Authorisation using Semantic Technologies
- There are multiple authorisation systems, of which PERMIS, Shibboleth and XACML are well-known
- But they're hard to use (lots of if-then-and-xor), hard to integrate, and don't do delegation/decentralisation naturally
- So take an alternative approach, based on class membership

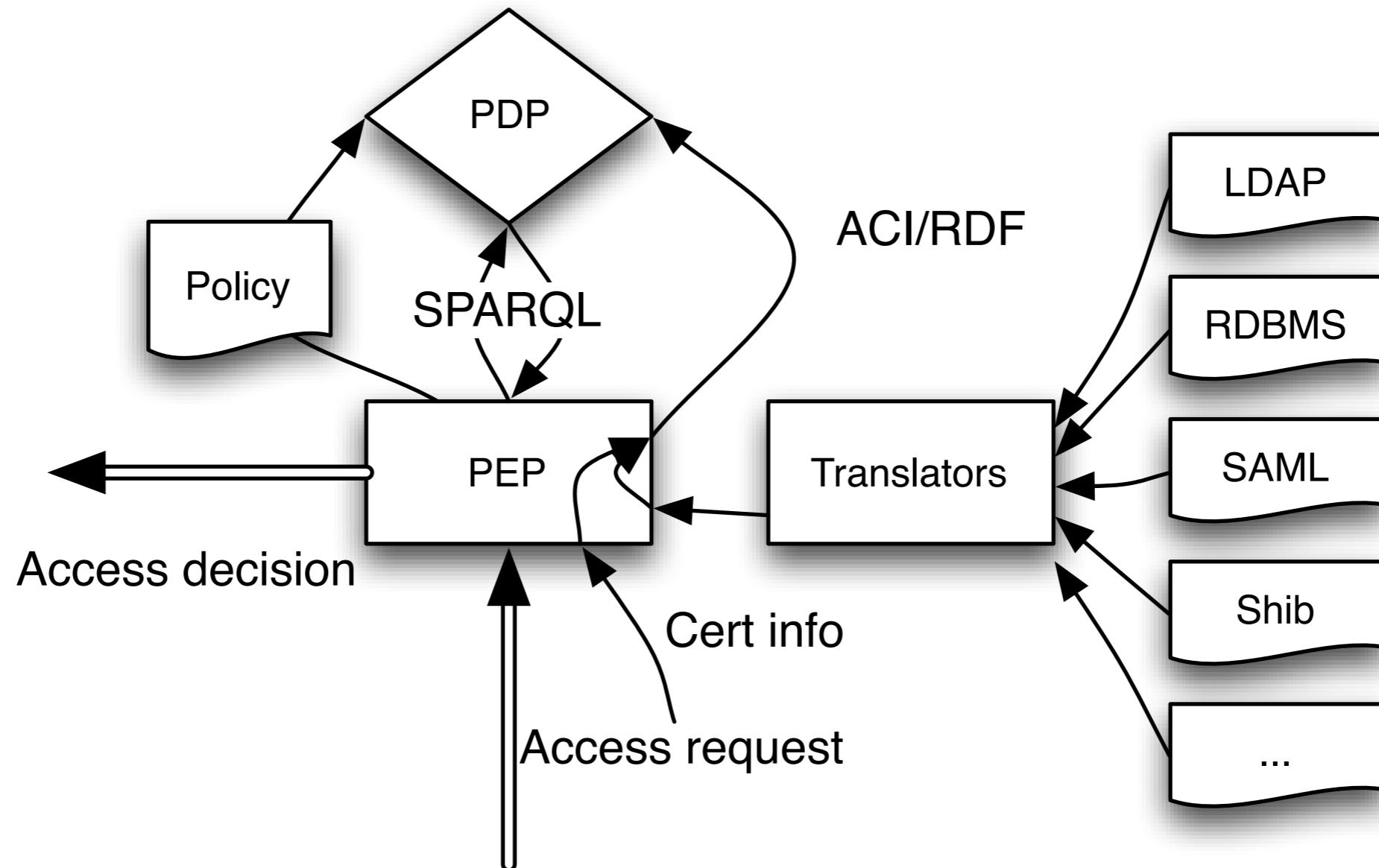
agast

# architecture



- PDP/ADF: Is user X provably a member of the class of people allowed to do Y?
- ADI: ontology defining relevant classes
- ADI: information about user X, expressed as RDF

# architecture with rdf

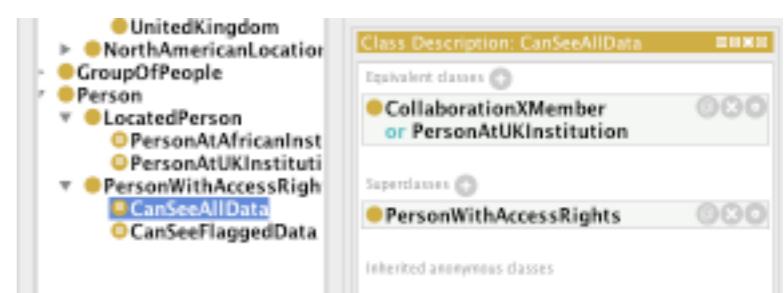
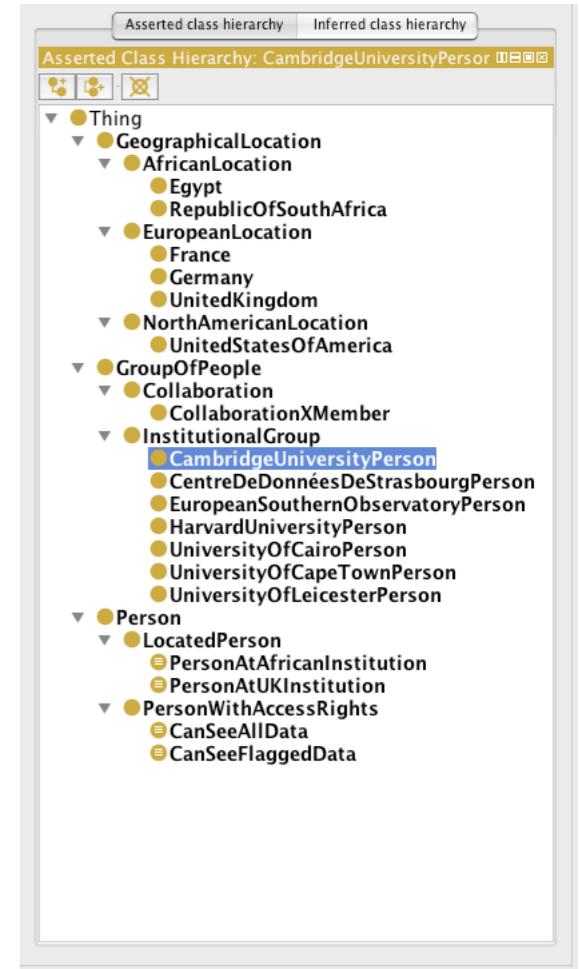


# screenshot demo

“Allow access from collaboration members, or members of european institutions; allow partial access to members of african institutions”

An ontology of people and locations

[the example is Guy Rixon’s]



# instance data

## Group and institution membership:

```
@prefix : <urn:example#> .  
@prefix ac: <http://eurovotech.org/access-control.owl#> .  
  
:Norman a ac:UniversityOfLeicesterPerson, ac:CollaborationXMember.  
:Guy a ac:CambridgeUniversityPerson.  
:Markus a ac:EuropeanSouthernObservatoryPerson.  
:Sébastien a ac:CentreDeDonnéesDeStrasbourgPerson.  
:Jonathan a ac:HarvardUniversityPerson;  
    a ac:CollaborationXMember.  
:Nelson a ac:UniversityOfCapeTownPerson;  
    a ac:CollaborationXMember.  
:Tutankhamun a ac:UniversityOfCairoPerson.
```

## Equivalences:

```
@prefix owl: <http://www.w3.org/2002/07/owl#>.  
<urn:example#Norman> owl:sameAs <mailto:norman@astro.gla.ac.uk>.
```

## SPARQL:

```
prefix : <http://eurovotech.org/access-control.owl#>
ask { <mailto:norman@astro.gla.ac.uk> a :CanSeeAllData }
```

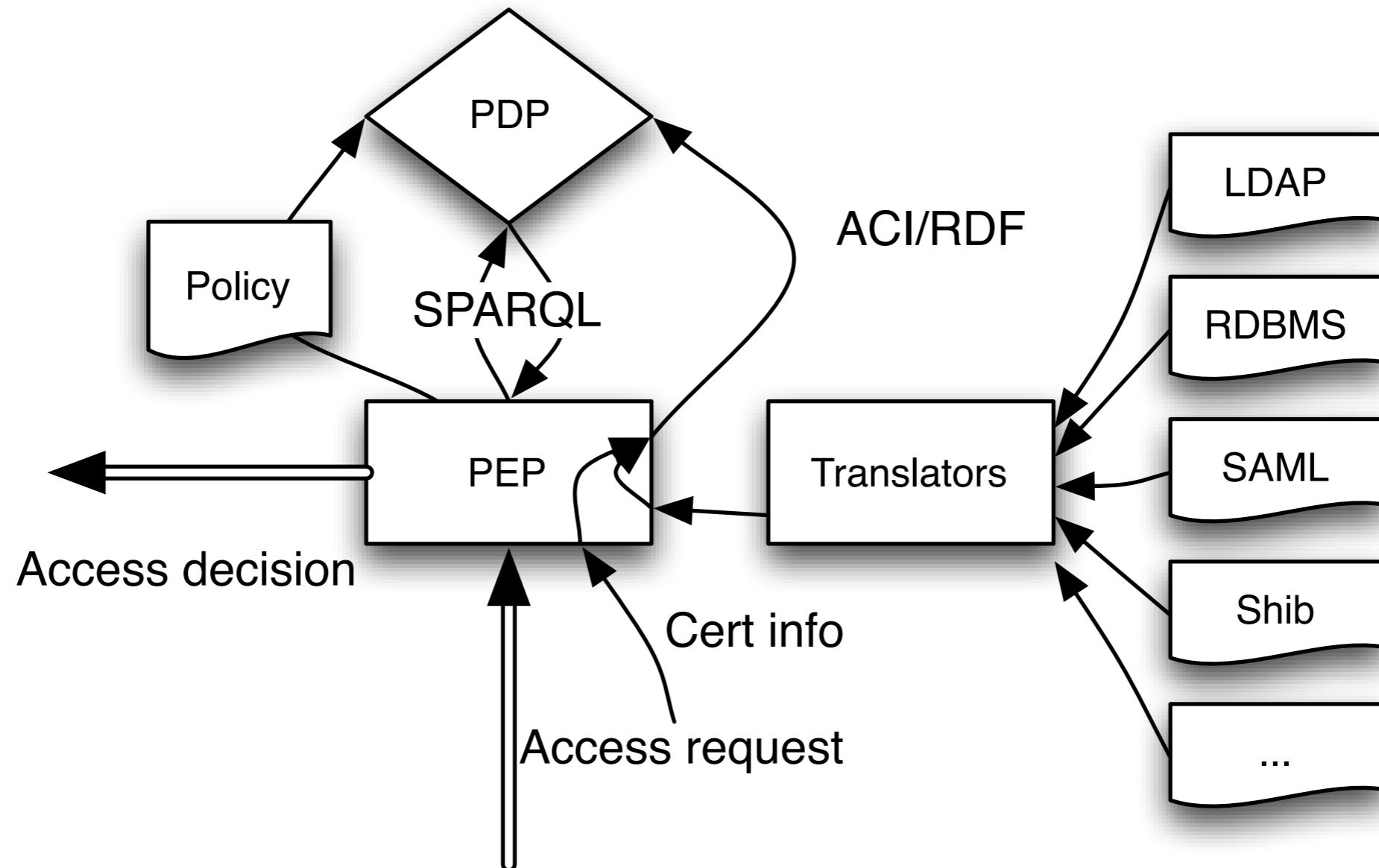
## SPARQL:

```
prefix : <http://eurovotech.org/access-control.owl#>
select ?person
where { ?person a :CanSeeAllData }
```

## using ‘curl’:

```
% curl --header content-type:application/sparql-query \
--data-binary @access-all.rq \
http://localhost:8080/quaestor/kb/testing \
--header accept:text/csv
person
mailto:norman@astro.gla.ac.uk
urn:example#Norman
urn:example#Guy
urn:example#Nelson
urn:example#Jonathan
%
```

# architecture with rdf



status

- | identified relevant domains
- | preliminary use-cases, due to be elaborated
- | turning use-cases into ontological policies ... to come
- | reasoner-based PDP prototyped

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url

- | <http://www.nesc.ac.uk/hub/projects/agast/>
- | <http://nxg.me.uk>