

Workshop

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The VO Technology Centre

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The VOTC

nature

- virtual organisation
- loose federation of projects
- overseen by VOTC Board
- vanguard of Euro-VO

building for three years time

aims

- mutual co-ordination of work
- share information and best practice
- R&D for next technology steps
- design and prototyping of new VO compts
 - Note : R&D means assessing and testing background technologies
NOT doing original CS research

VOTC projects

- formally only one so far - VOTECH
- other work under discussion (eg ESA)
- currently VOTC Board = VOTECH Board
- will change if further projects recognised

VOTECH

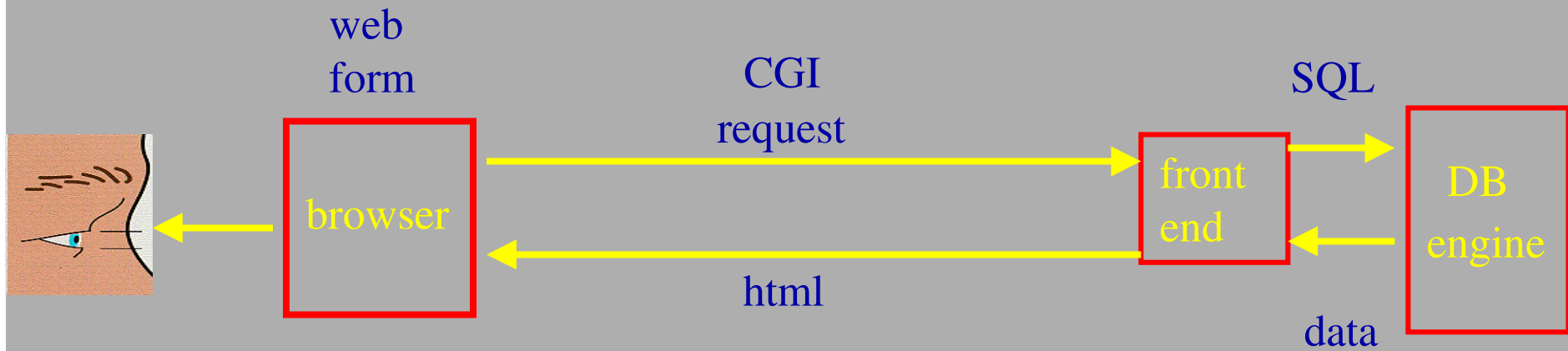
- EC funded "Design Study"
- start Jan 2005 end Dec 2008
- funds ~12 staff + similar from partners
- partners : AstroGrid/ESO/CDS/INAF

VOTECH work areas

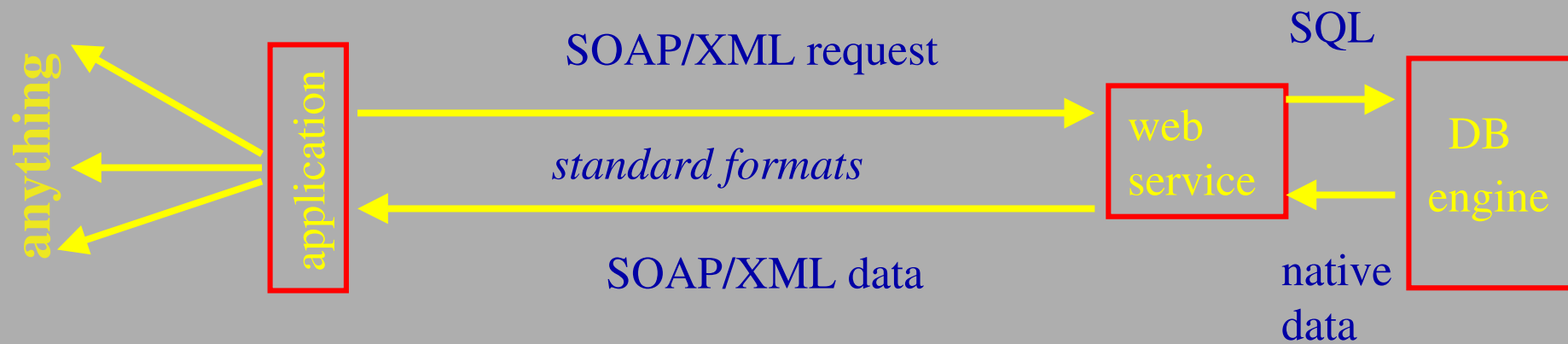
- DS1 = consortium management
- DS2 = technical co-ordination
- DS3 = new infrastructure
- DS4 = user tools
- DS5 = automated resource discovery
- DS6 = data exploration

VO technology in four pictures

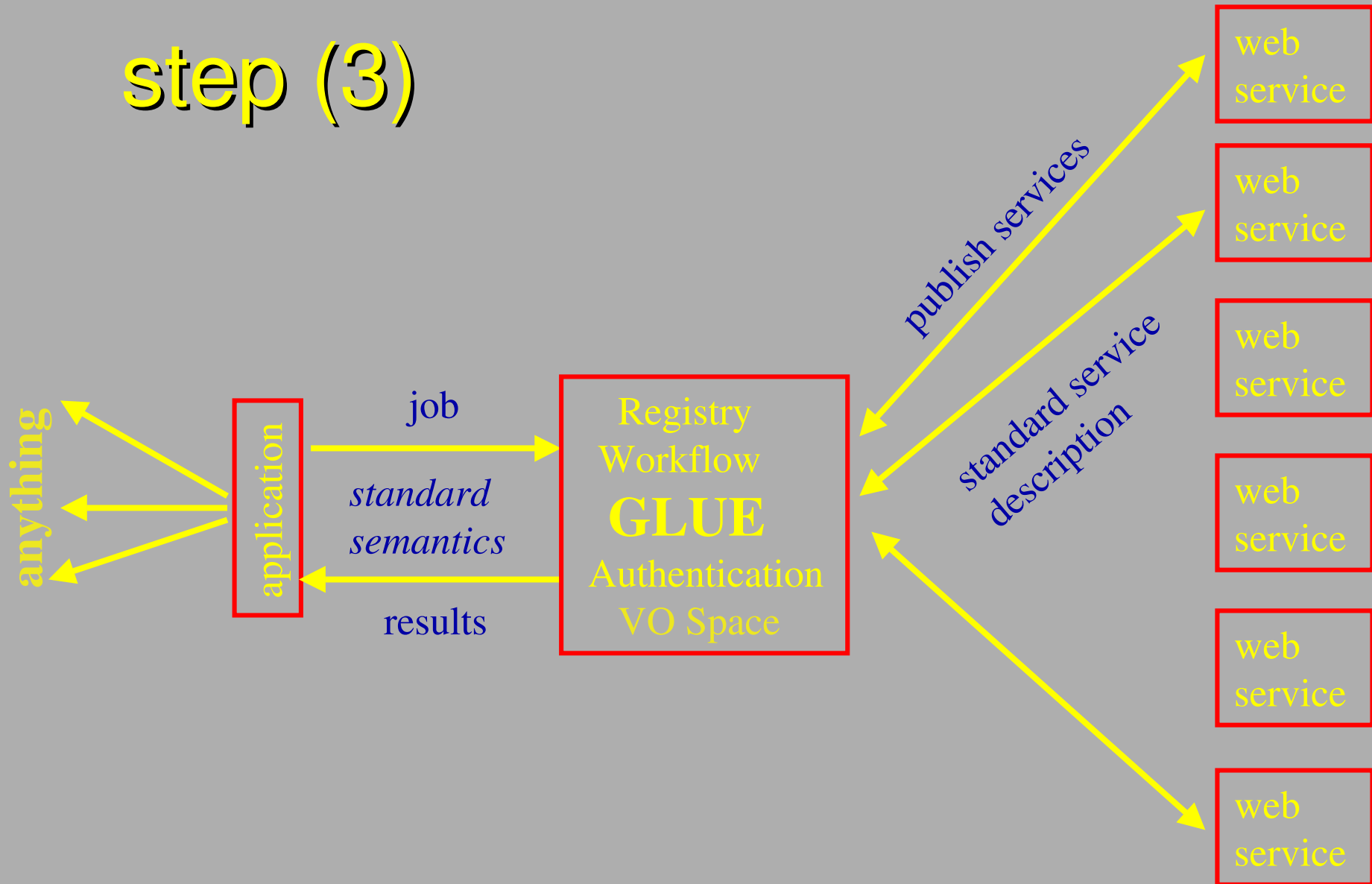
step (1)



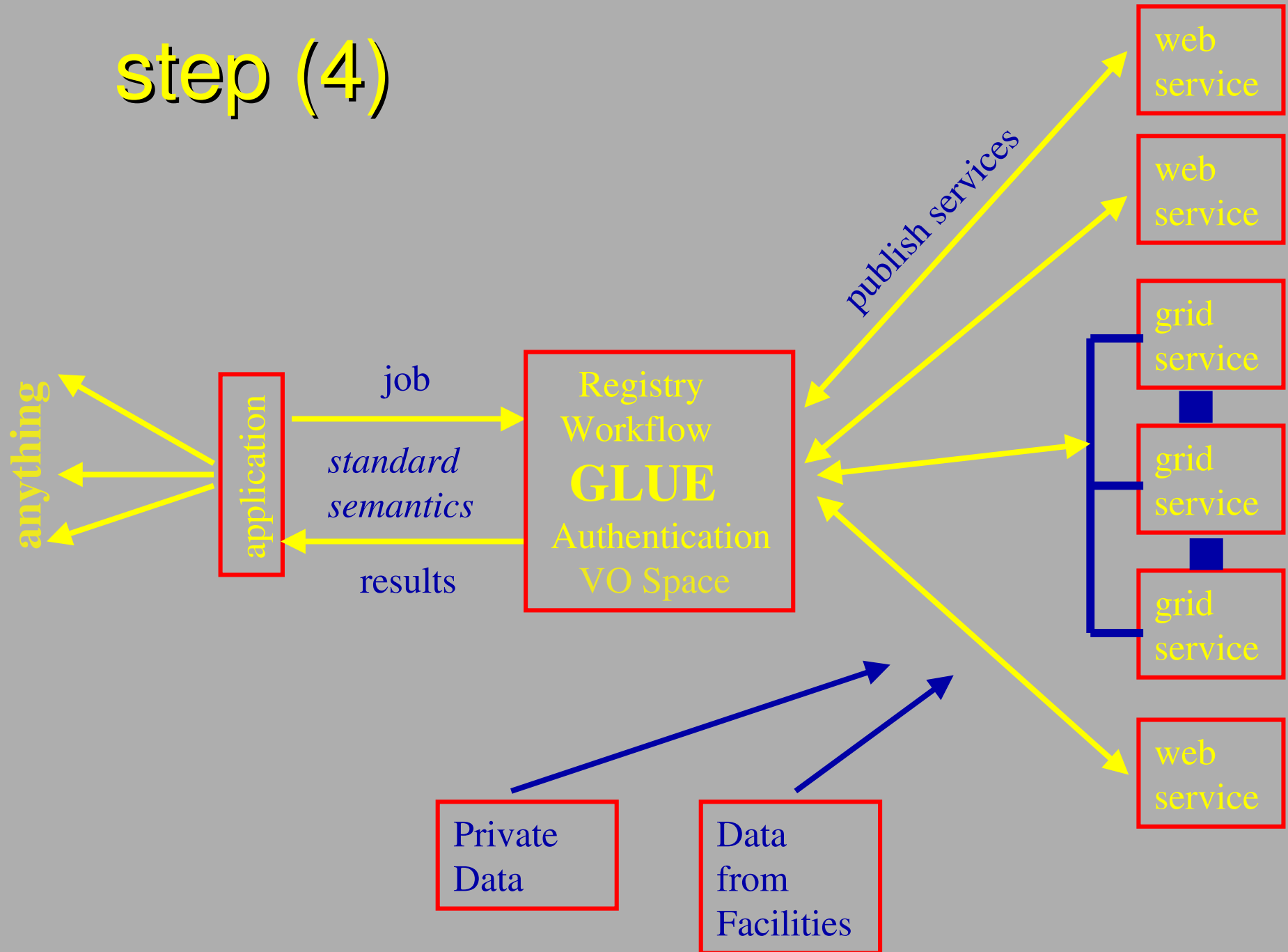
step (2)



step (3)



step (4)



publishing metaphor

- experiments/facilities are **authors**
 - data centres are **publishers**
 - VO portals are **shops**
 - end-users are **readers**
-
- VO infrastructure is **distribution system.**

Achievements

work to do

- agree standards
- build software glue
- build VO-aware tools
- build VO-aware data services

standards

- very good progress : IVOA
- formats (VOTable)
- protocols (SIA, SSA)
- service description (RSM)
- web and grid service interfaces
- dictionary of terms (UCDs)

glue

- part done
- registry
- data service publication tools
- application interfaces / workflow
- simple virtual storage

tools

- starting to emerge
- VOPlot
- TopCat
- VOSpec
- new Aladin

services

- growing fast
- large number of cone search services
- cross match services emerging
- source extraction and photo-z services
- solar movie construction

Next Steps

infrastructure (DS3)

- authentication etc
 - single sign-on; group sharing
- better virtual storage
 - transparent international sharing
- upgraded registry
 - semantics ; complex search interface
- grid infrastructure
 - load sharing, data replication, resource accounting

client side tools (DS4)

- standardise interfaces (CEA/UWS)
 - easy to write; build into workflows
- standardise semantics / data model
 - "what can I do with this data ?"
- requirements analysis
 - community calls (like AstroVirtel)
- build suite of new tools

server side data mining (DS6)

- large DB searches
- large volume N and N^{**2} challenges
 - N-D visualisation; correlation fns; FTs, etc
- grid challenges
 - PB cross match
- theory services
 - e.g. simulations on demand
- physical challenge
 - PB storage; fast search engines;
HPC analysis engines; fat pipes to other DCs

semantics (DS5)

- UCDs = unstructured dictionary
- next step "ontology"
 - relations between terms
 - dynamically served meanings
 - operations allowable on terms
- more flexible resource discovery
more powerful tools
- riding on WWW developments
 - Web Ontology Language (OWL)
 - The Semantic Web

Fin