

# ICENI:OGSAexperience (todate)

GettingOGSAgoing  
13<sup>th</sup> June2002

## ICENI

*The Iceni, under Queen Boudicca, united the tribes of South -East England in a revolt against the occupying Roman forces in AD60 .*

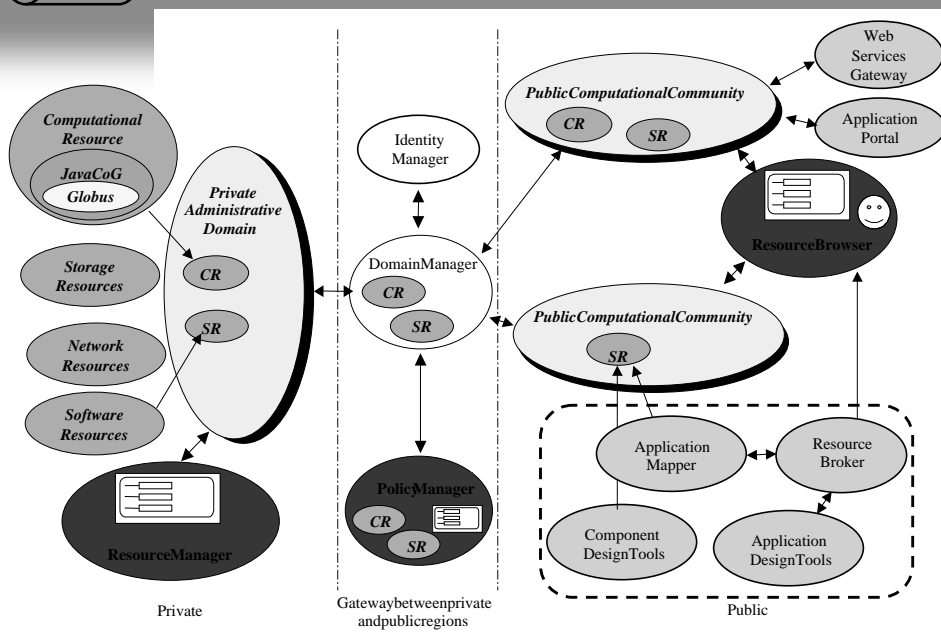


IC e-Science Networked Infrastructure  
Developed by LeSC Grid Middleware Group

# ICENIStack

- Portal
- ApplicationConstruction&Deployment
  - Usertools,resourcebrowser,etc.
- Middleware
  - discovery,deployment
- UnderlyingGridFabric

# ICENIArchitecture



## WebPortals

- Handheld wireless devices become ubiquitous
  - Personal Digital Assistants
  - Mobile Phones
- Interaction with e-science infrastructures
  - Anytime
  - Anyplace
  - Anywhere
- Goal: Provide secure 'one stop shop' for e-science



## EPIC: e-Science Portal at Imperial College

- Collaborative LeSC industrial project with Sun Microsystems
- Develop a secure portal infrastructure to:
  - Access your own personal environment
  - Applications to support day-to-day e-science
  - Interaction with other Grid infrastructures
- Allow role-based access to resources
  - Anonymous: public web pages
  - Students: internal pages, email, compute resources
  - Staff: restricted pages

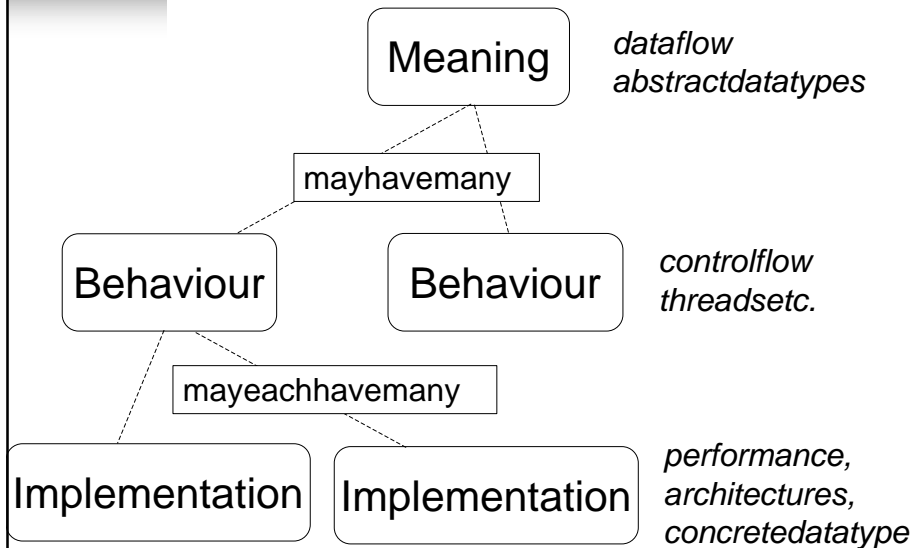
## Higher-level Services

- Component framework provides:
  - Rich application meta -data
  - Decoupled component definition and implementation
- Application Mapper:
  - Exploit performance information to map component implementation to the 'best' resources
- Resource Broker:
  - Resource selection through user defined policies:
    - Minimise cost using computational economics
    - Minimise execution time using the application mapper

## Grid Enabled Component Framework

- Goals:
  - Promote component reuse and sharing
  - Simplify application construction
  - Enabled deployment to diverse Grid resources:
    - Communication Selection
    - Implementation Selection
- Component Repository
  - Browse the meta -data within the component
    - Version 1: Abstractions & Implementations
    - Version 2: Meaning, Behaviour & Implementation

## Layered Abstraction

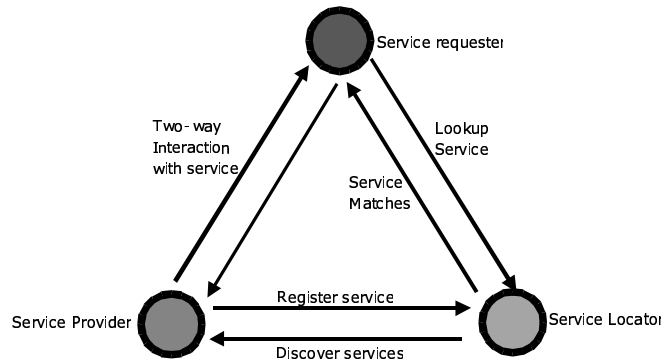


## Grid&WebServices

- ' Why?
  - ' Convergenceofrequirementsinboth communities
  - ' Strongcommercialinterestinwebservices
  - ' Standardisationprocessesthroughw3cand industrialplayersjoiningforces
  - ' Thelackofgridstandards
  - ' Globus Toolkit → OpenGridServices Architecture(OGSA)

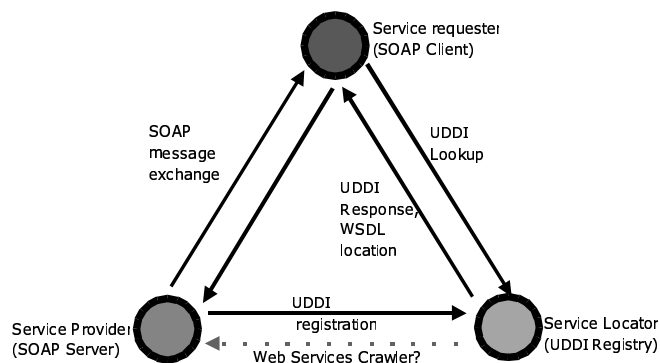
# ICENI& Jini:P2P

Conceptual Model of peer-to-peer architecture

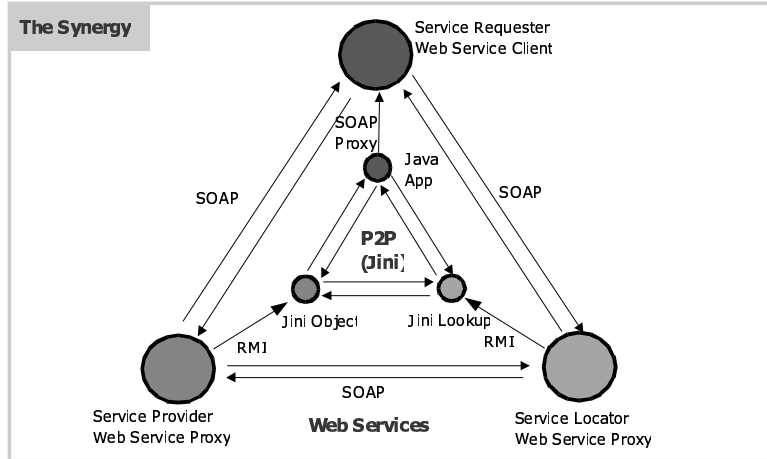


# WebServicesArchitecture

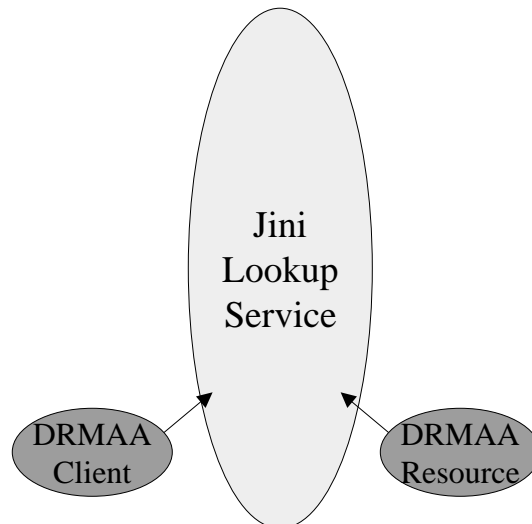
Web Service Model



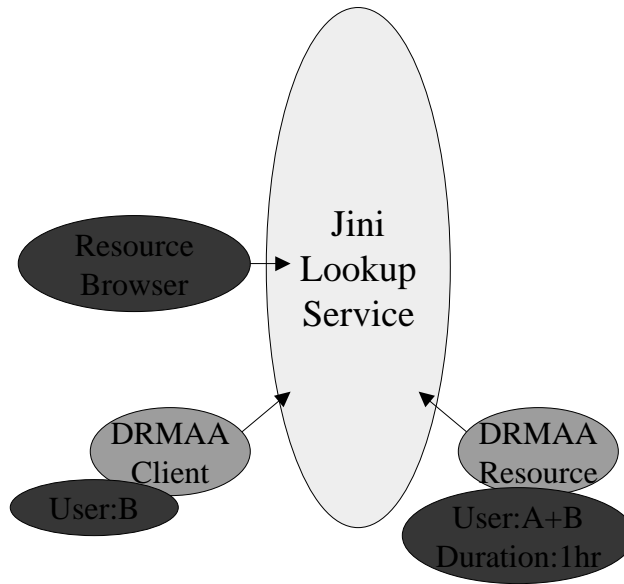
# Synergy



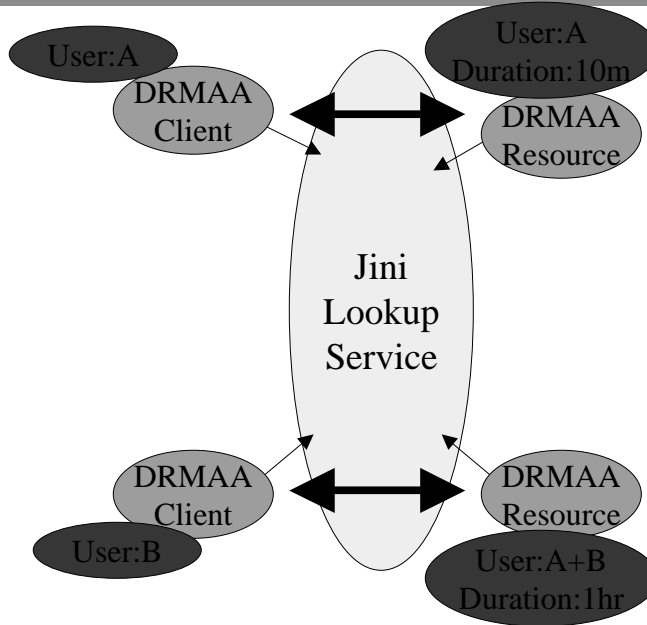
# GridServiceContracts



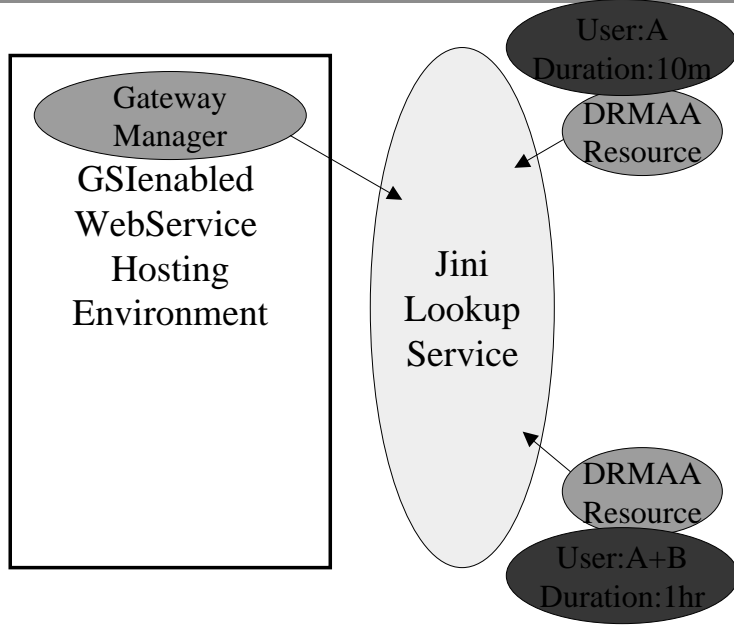
# GridServiceContracts



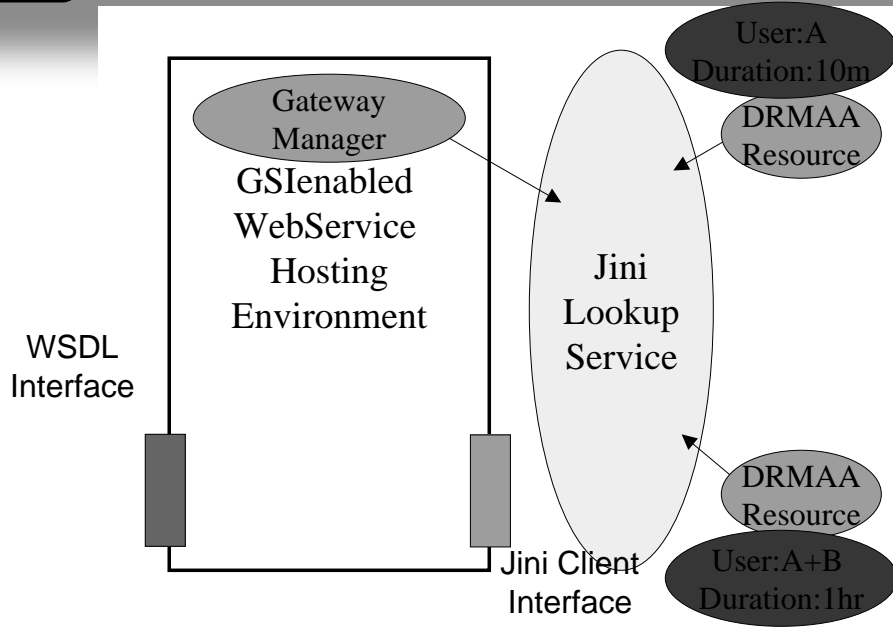
# GridServiceContracts

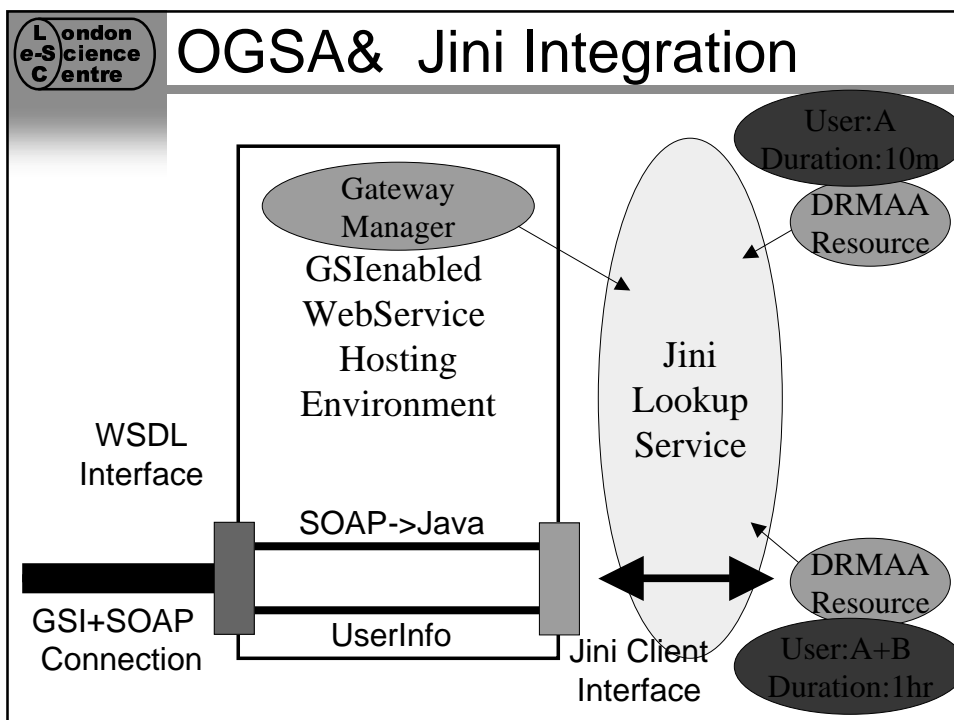
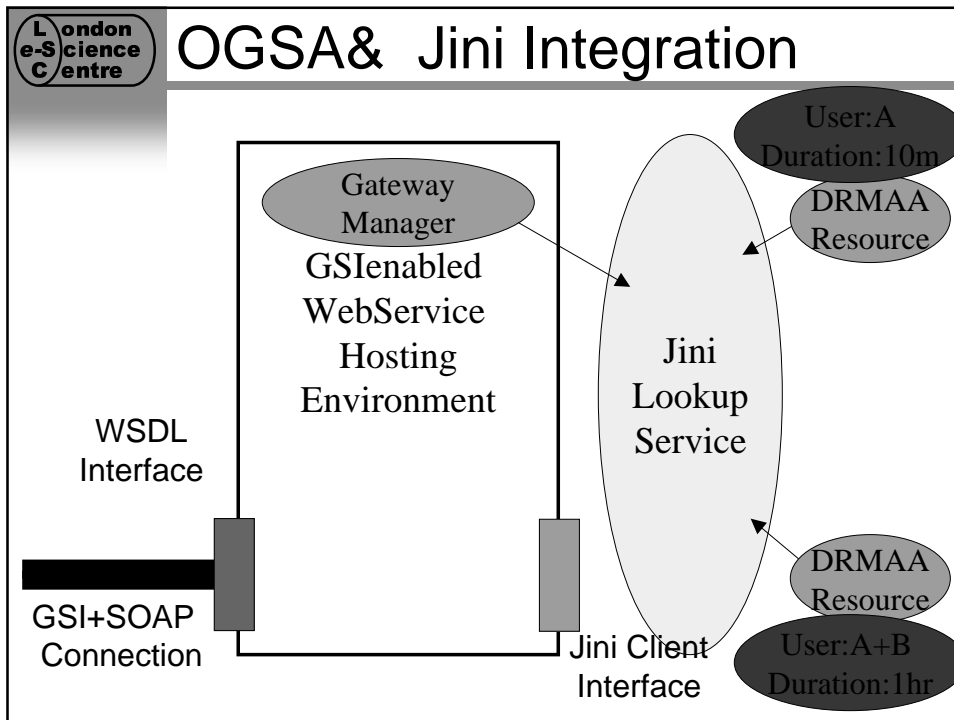


# OGSA& Jini Integration

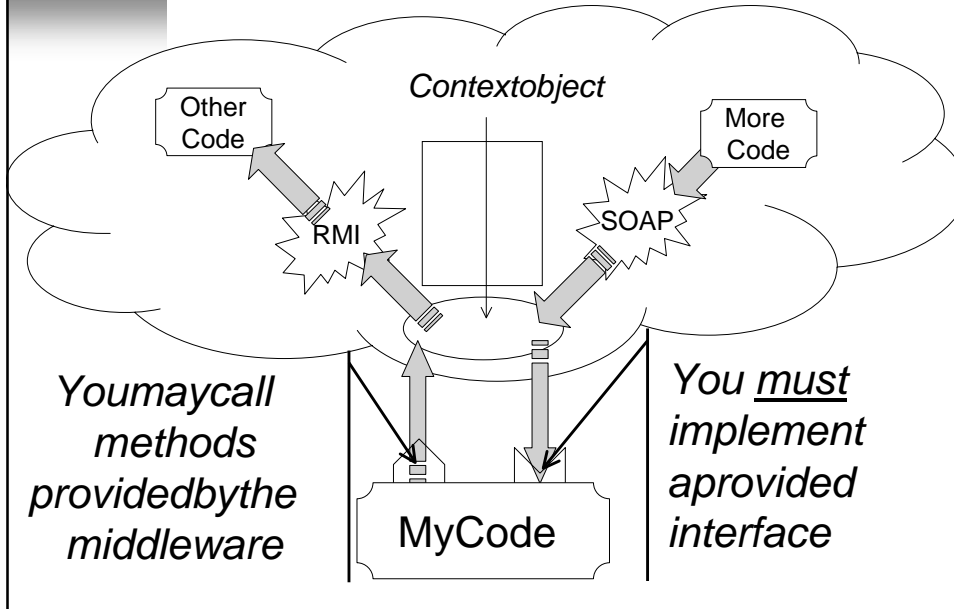


# OGSA& Jini Integration

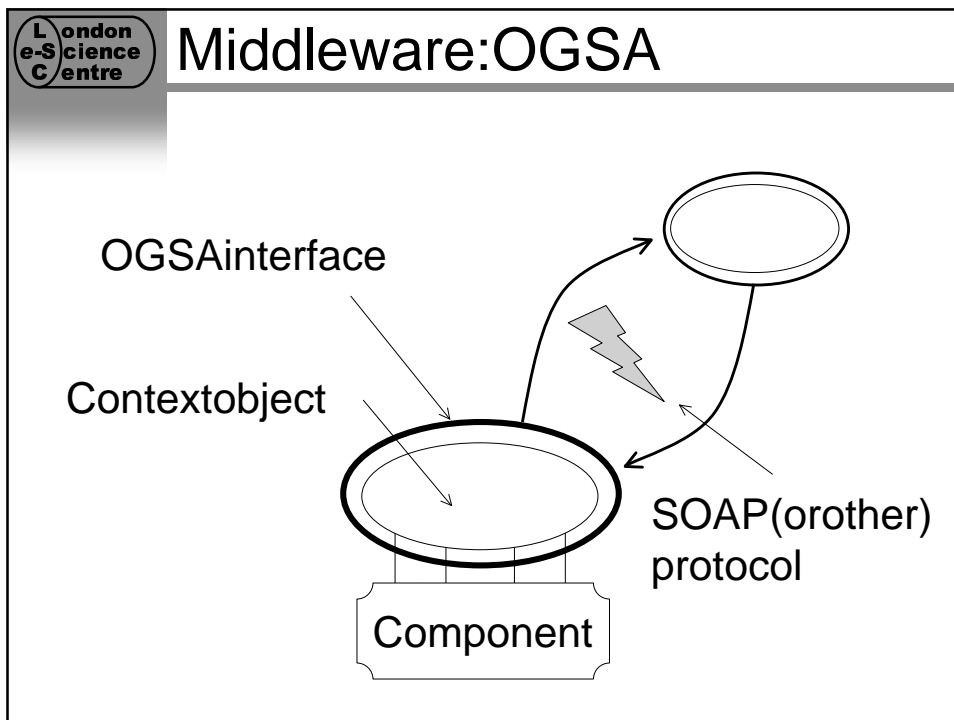




## Middleware:UserView



## Middleware:OGSA



## OGSAProvides

- InterfaceforServiceProvision:  
Component → Service
- Interoperability
- SupportforMultipleBehaviour  
Models

## OGSAConcerns

- Eachserviceisbothclient&server:  
– LightweightserverorContainer?
- C/SvsP2P
- Nobehaviourormeaningmeta -data:  
– ServiceComposition?
- Scalability:  
– ServiceDiscovery?

- OGSAaddsexcellentinterface  
(middlewarelevel)
- SynergywithP2Pmodel
- Necessary?
  - NotonlyOGSAatthislevel
- Sufficient?
  - OGSAisn'tthewholestory:  
otherlevelsofabstraction