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ICENI Inside: Exposing the OGSA through a portal



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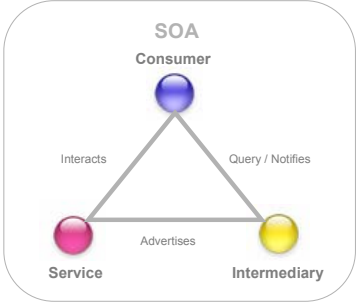
1. A service oriented architecture
2. OGSA
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4. The ICENI portal
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6. Acknowledgments

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A Service Oriented Architecture




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SOA



The diagram shows a triangle with three nodes: a purple sphere at the top labeled 'Consumer', a pink sphere at the bottom left labeled 'Service', and a yellow sphere at the bottom right labeled 'Intermediary'. Lines connect the nodes with labels: 'Interacts' between Consumer and Service, 'Query / Notifies' between Consumer and Intermediary, and 'Advertises' between Service and Intermediary.



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Open Grid Services Architecture


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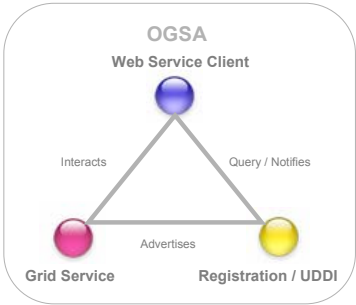
- Utilises standard Web services infrastructure
- Building on current Globus Toolkit:
 - **Grid service**: semantics for service interactions
 - Management of transient instances (and state)
 - **Factory, Registry, Discovery**, other services
 - Reliable and secure transport
- Multiple hosting targets: J2EE, .NET, "C", ...
- Service oriented architecture enables resource visualisation

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Open Grid Services Architecture




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OGSA




The diagram shows a triangle with three nodes: a purple sphere at the top labeled 'Web Service Client', a pink sphere at the bottom left labeled 'Grid Service', and a yellow sphere at the bottom right labeled 'Registration / UDDI'. Lines connect the nodes with labels: 'Interacts' between Web Service Client and Grid Service, 'Query / Notifies' between Web Service Client and Registration / UDDI, and 'Advertises' between Grid Service and Registration / UDDI.

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ICENI


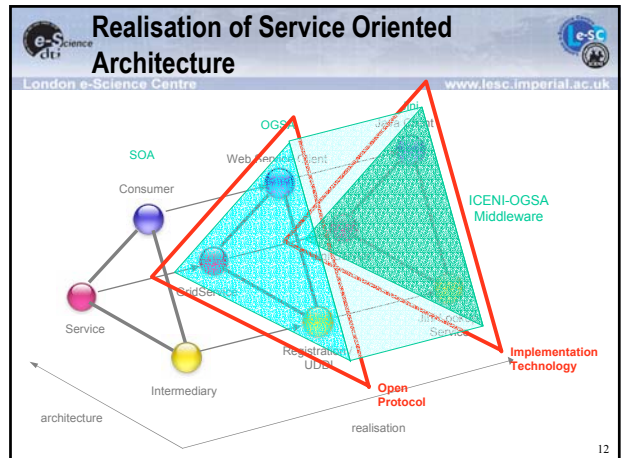
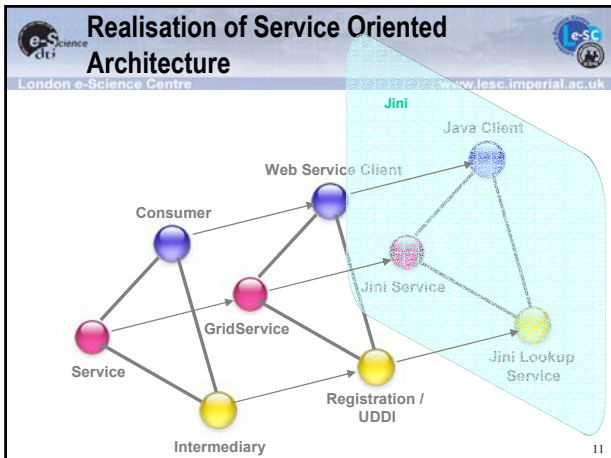
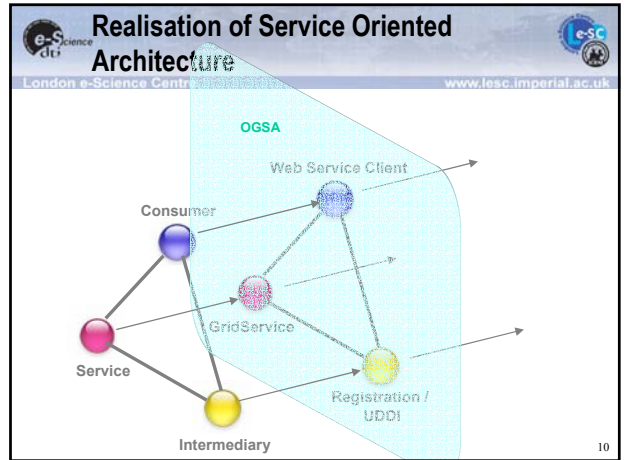
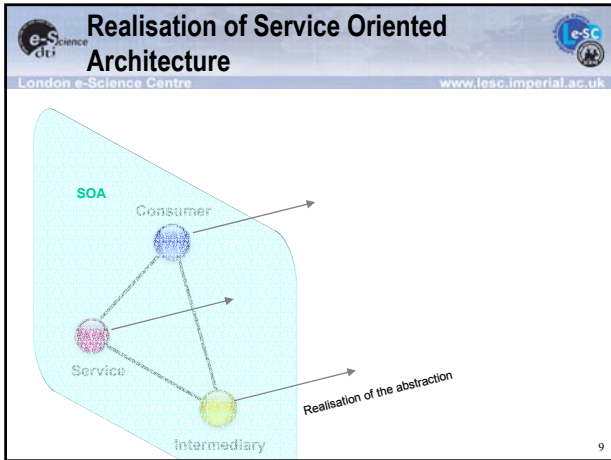
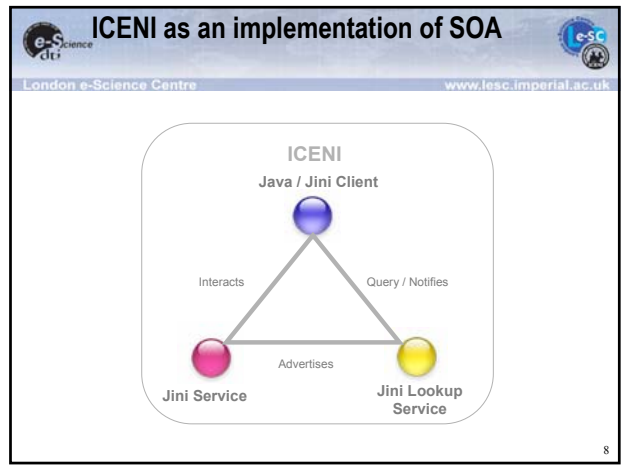
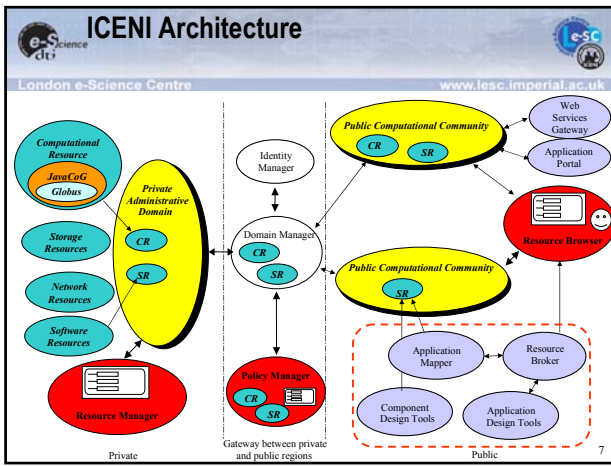
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The Iceni, under Queen Boudicca, united the tribes of South-East England in a revolt against the occupying Roman forces in AD60.



- **IC e-Science Networked Infrastructure**
- Developed by LeSC Grid Middleware Group
- Collect and provide relevant Grid meta-data
- Use to define and develop higher-level services
- Interaction with other frameworks: Web Services, Jxta etc.

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Advantages of ICENI-OGSA Middleware

- Provides a realisation of the *Open Grid Service Architecture* using Java Jini.
- Consists of a model of transparent integration of SOA implementation and open protocols. Existing technology advantage can be exploited through middleware.
- Interoperable Grid Services, rich metadata and flexible service federation are the keys to build an *Open Grid Services Market*.

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NetBeans: Providing an ICENI client

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ICENI Portal Welcome

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ICENI Portal
Welcome!

Home
Login
Migrate

Resource Menu
Services
Components
Resources

Application Menu
Create
Exclude
Manage

ICENI Portal
Welcome!

Home
Login
Migrate

Resource Menu
Services
Components
Resources

Application Menu
Create
Exclude
Manage

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ICENI Portal Login

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ICENI Portal
Login

Home
Login
Migrate

Resource Menu
Services
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Create
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ICENI Portal
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Resources

Application Menu
Create
Exclude
Manage

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ICENI Portal Specify location of service community

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ICENI Portal
Service community location

Home
Logout
Migrate

Resource Menu
Services
Components
Resources

Application Menu
Create
Exclude
Manage

ICENI Portal
Service community location

Home
Logout
Migrate

Resource Menu
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Exclude
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ICENI Portal View available services

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ICENI Portal
Available services

Home
Logout
Migrate

Resource Menu
Services
Components
Resources

Application Menu
Create
Exclude
Manage

ICENI Portal
Available services

Home
Logout
Migrate

Resource Menu
Services
Components
Resources

Application Menu
Create
Exclude
Manage

#	Name
1	PublicSchedulingFramework instance from jni.itxev07.doc.ic.ac.uk/
2	PublicSoftwareResource instance from jni.itxev07.doc.ic.ac.uk/
3	PublicSoftwareResource instance from jni.itxev07.doc.ic.ac.uk/
4	PublicSoftwareResource instance from jni.itxev07.doc.ic.ac.uk/
5	PublicSoftwareResource instance from jni.itxev07.doc.ic.ac.uk/
6	PublicSoftwareResource instance from jni.itxev07.doc.ic.ac.uk/
7	Deactivated coreNotificationHttpNotificationSubscriptionFactoryService
8	PublicSoftwareResource instance from jni.itxev07.doc.ic.ac.uk/
9	PublicSoftwareResource instance from jni.itxev07.doc.ic.ac.uk/
10	Deactivated coreNotificationSecureNotificationSubscriptionFactoryService
11	PublicSoftwareResource instance from jni.itxev07.doc.ic.ac.uk/
12	PublicSoftwareResource instance from jni.itxev07.doc.ic.ac.uk/
13	PublicSoftwareResource instance from jni.itxev07.doc.ic.ac.uk/
14	Deactivated coreNotificationNotificationSubscriptionFactoryService
15	PublicSoftwareResource instance from jni.itxev07.doc.ic.ac.uk/
16	Handle Resolver
17	PublicLaunchingFramework instance from jni.itxev07.doc.ic.ac.uk/
18	Container Registry Service

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ICENI Portal

View available components

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ICENI Portal
Available components

Service Community:
<http://gto.doc.ic.ac.uk:8062/>

Advised Components

#	Name
1	org.icsgrid.basic.Components.hello.sink
2	org.icsgrid.GENE.demo.Ocean
3	org.icsgrid.basic.Components.input.Input
4	org.icsgrid.GENE.demo.Coupler
5	org.icsgrid.basic.Components.hello.source
6	org.icsgrid.basic.Components.output.Output
7	org.icsgrid.GENE.demo.Setup
8	org.icsgrid.basic.Components.collectives.broadcast.Broadcast
9	org.icsgrid.GENE.demo.Display
10	org.icsgrid.GENE.demo.Atmosphere
11	org.icsgrid.GENE.demo.Seaice

Running Components
There are currently no running components at this location. Please try refreshing this page or migrating to another service community.

[Refresh](#) [Migrate](#)

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ICENI Portal

View component information

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ICENI Portal
Component Information

Service Community:
<http://gto.doc.ic.ac.uk:8062/>

Location:
<http://icsgrid.GENE.demo.Coupler>
<http://148.188.8.30:8062/ogsa/services/763a9ef-dfb-4149-9908-ee195688a787#WSDL>

Package: org.icsgrid.GENE.demo

Location: Unspecified

In ports:
AtmosIn (genie Type)
OceanIn (genie Type)
SeaiceIn (genie Type)
SetupIn (genie Type)

Out ports:
AtmosOut (genie Type)
OceanOut (genie Type)
SeaiceOut (genie Type)
DisplayOut (genie Type)

Implementation: default

[Available components](#)

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ICENI Portal

Create application 1

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ICENI Portal
Application creator

Service Community:
<http://gto.doc.ic.ac.uk:8062/>

Please choose the components that you would like to use in your application.

Available Components

#	Name	?
1	org.icsgrid.basic.Components.hello.sink	<input type="checkbox"/>
2	org.icsgrid.GENE.demo.Ocean	<input type="checkbox"/>
3	org.icsgrid.basic.Components.input.Input	<input type="checkbox"/>
4	org.icsgrid.GENE.demo.Coupler	<input type="checkbox"/>
5	org.icsgrid.basic.Components.hello.source	<input type="checkbox"/>
6	org.icsgrid.basic.Components.output.Output	<input type="checkbox"/>
7	org.icsgrid.GENE.demo.Setup	<input type="checkbox"/>
8	org.icsgrid.basic.Components.collectives.broadcast.Broadcast	<input type="checkbox"/>
9	org.icsgrid.GENE.demo.Display	<input type="checkbox"/>
10	org.icsgrid.GENE.demo.Atmosphere	<input type="checkbox"/>
11	org.icsgrid.GENE.demo.Seaice	<input type="checkbox"/>

[Refresh](#) [Migrate](#) [Next >>](#)

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ICENI Portal

Create application 2

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ICENI Portal
Application creator

Service Community:
<http://gto.doc.ic.ac.uk:8062/>

Please connect the ports of this component to the associated ports of the other components in your application.

Component: org.icsgrid.GENE.demo.Coupler

In ports:
AtmosIn (genie Type) AtmosOut
OceanIn (genie Type) OceanOut
SeaiceIn (genie Type) SeaiceOut
SetupIn (genie Type) SetupOut

Out ports:
AtmosOut (genie Type) AtmosIn
OceanOut (genie Type) OceanIn
SeaiceOut (genie Type) SeaiceIn
DisplayOut (genie Type) (please choose a port)
DisplayOut (genie Type) (please choose a component)

[Refresh](#) [Migrate](#) [Go Previous](#) [Next >>](#)

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ICENI Portal

Create application 3

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ICENI Portal
Application creator

Service Community:
<http://gto.doc.ic.ac.uk:8062/>

Please connect the ports of this component to the associated ports of the other components in your application.

Component: org.icsgrid.GENE.demo.Atmosphere

In ports:
AtmosIn (genie Type) AtmosOut

Out ports:
AtmosOut (genie Type) AtmosIn

[Refresh](#) [Migrate](#) [Go Previous](#) [Next >>](#)

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ICENI Portal

Create application 4

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ICENI Portal
Application creator

Service Community:
<http://gto.doc.ic.ac.uk:8062/>

Congratulations! Your application is now ready to for execution on the ICENI grid. Press the "submit" button below to execute your application.

[Refresh](#) [Migrate](#) [Go Previous](#) [Export](#) [Submit >>](#)

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ICENI Portal Logout

Are you sure that you wish to logout?

Yes No

Submit

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Future work: GENIE

- Grid ENabled Integrated Earth system model (NATURAL ENVIRONMENT RESEARCH COUNCIL)
- Aims to simulate global climate by integrating a number of specialised model components (i.e. ocean, atmosphere, land-surface etc.)
- Proposes using Grid infrastructure to couple together individual model components, execute them, and share the resultant data.
- VO = { LeSC, SReSC, Reading, SOC, UEA, CEH, Bristol }
- Currently using customised portal environment developed at LeSC, based on Condor technology, to perform large scale parameter studies.

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EPIC - e-Science Portal at Imperial College

GENIE-Trainer Experiment Submission System

Welcome!

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Advantages of using ICENI Portal

- Allows experiment to be built in a systematic and repeatable way.
- Provides flexibility: nature of input/output data, parameter space explored, etc. is at the discretion of the user.
- OGSA compliant architecture allows for true resource brokering and grid enablement of application.
- Will demo at AHM2003!

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Acknowledgements

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 - Asif Saleem, Laurie Young, Gary Kong, Jeffrey Hau
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