GOCDB GLUE2 Compatibility

David Meredith (david.meredith@stfc.ac.uk)
John Casson (john.casson@stfc.ac.uk)

GOCDB Glue2 Compatibility

- Rendering GOCDB data in GLUE2 compatible format

- GOCDB and GLUE2 data models do overlap (some differences specifics)

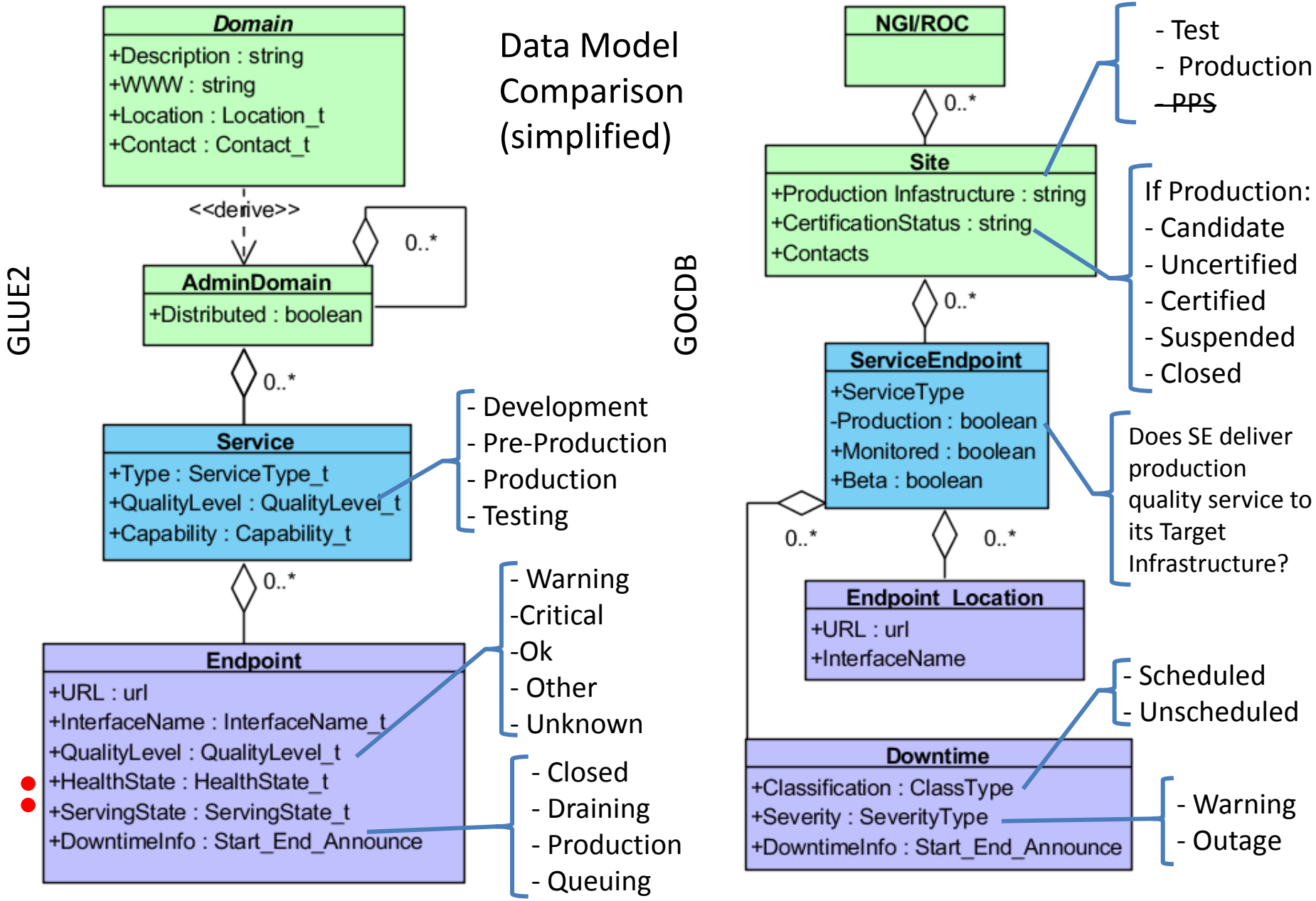
- The v4.0 XML_Output module is too inflexible
  - Not able to render nested XML object hierarchies (produces 'flat' xml documents that largely map directly to tables)

- Adding (SQL)Query2XML library
  - Far more flexible – can easily generate nested XML documents (required for GLUE2 XML rendering)
  - Will now be possible to render GOCDB data in GLUE2
  - Writeable REST API to insert/update/delete services+downtimes (future?)

- Add new PI queries to render data in GLUE2 XML docs – first version expected ~May(after Virtual Sites and support for multiple Endpoints per Service)

  e.g. Render NGI_UK sites and services as a nested GLUE2 doc:
  https://goc.egi.eu/gocdbpi/public/?method=get_glue2_doc&roc=NGI_UK

Data Model Comparison (simplified)

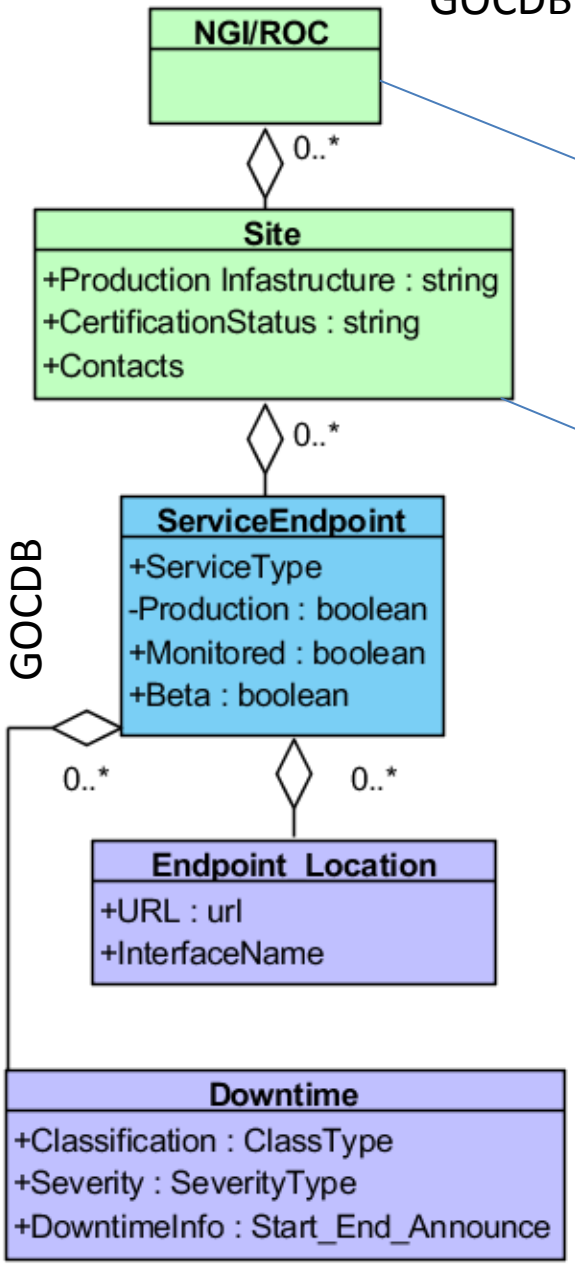


- Put selected Endpoints into DT

- Put all Service Endpoints into DT
- Downtime history

GOCDB –to-> GLUE2 Mapping 1 [NGI]->[Site]/[VSite]

GOCDB



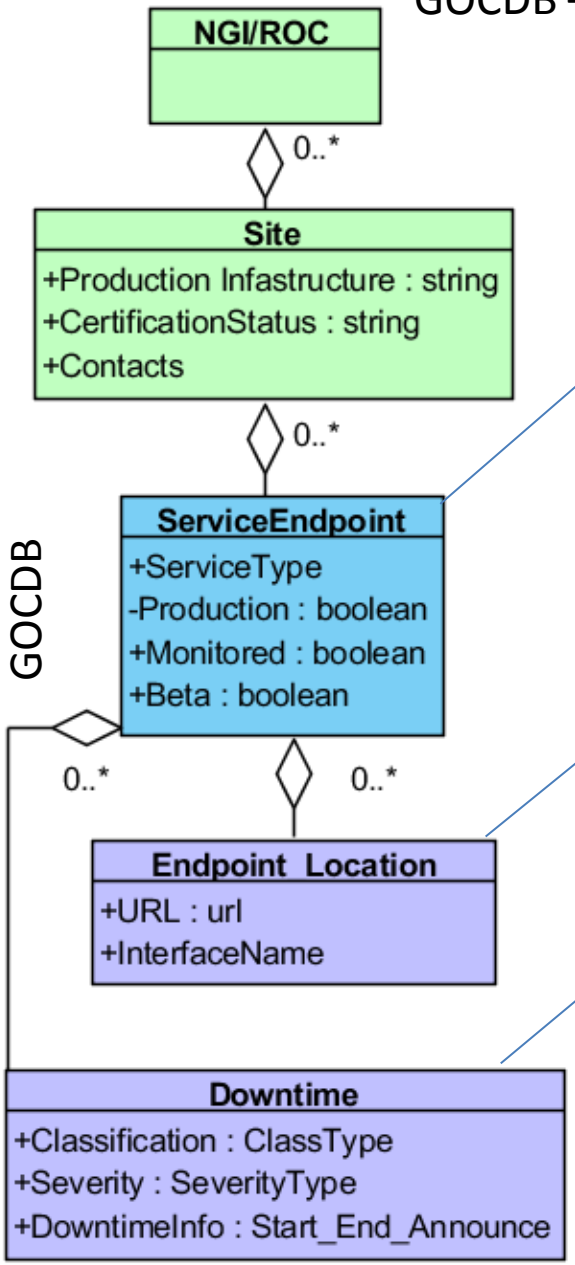
GLUE2

```
<Domains>
  <AdminDomain BaseType="Domain"> <!-- Map to NGI/ROC -->
      <ID>2345</ID>
      <Name>NGI_UK</Name>
      <Description>An NGI description</Description>
      <WWW>http://www.ukngi.ac.uk</WWW>
      <!-- More elements not shown - <location> <contact>  etc -->
      <!-- An NGI is distributed -->
      <Distributed>true</Distributed>
      <AdminDomain BaseType="Domain"> <!-- Map to Site or VSite -->
          <ID>2524</ID>
          <Name>GRID-LCG2</Name>
          <Description>A site description</Description>
          <WWW>http://ngs.ac.uk/siteA</WWW>
          <!-- More elements not shown - <location> <contact>  etc -->
          <!-- Distributed: If physcial site=false, if VSite=true -->
          <Distributed>false</Distributed>
          <Extension><LocalID>ProductionInfrastructure</LocalID>
              <key>TargetInfrastructure</key><value>Production|Test</value
          </Extension>
          <Extension><LocalID>CertificationStatus</LocalID>
              <key>CertificationStatus</key><value>Certified</value>
          </Extension>
          <Services>
              <Service>
                  ...
              </Service>
              <Service>
                  ...
              </Service>
          </Services>
      </AdminDomain>
  </AdminDomain>
</Domains>
```

Next slide...

Current XSD – need to render custom types as GLUE2 <Extensions>

GOCDB –to-> GLUE2 Mapping 2 [Service]->[Endpoint]->[Downtime]



GLUE2

```
<Services>
  <Service BaseType="Service">
    <ID>388</ID>
    <Name>ce.grid-ngs.ac.uk</Name>
    <Type>CREAM-CE</Type>
    <QualityLevel>production | testing</QualityLevel>
    <Endpoint BaseType="Endpoint">
      <ID>63562</ID>
      <URL>http://some.url.dl.ac.uk/creamEndpoint</URL>
      <!-- IntefaceName values -->
      <InterfaceName>org.glite.ce.CREAM</InterfaceName>
      <!-- production | testing | development | pre-productic
      <QualityLevel>production</QualityLevel>
      <!-- warning | critical | ok | other | unknown -->
      <HealthState>ok</HealthState>
      <!-- closed | draining | production | queuing -->
      <ServingState>production</ServingState>
      <DowntimeAnnounce>2012-03-29T12:30:00Z</DowntimeAnnounc
      <DowntimeStart>2012-03-29T15:00:00Z</DowntimeStart>
      <DowntimeEnd>2012-03-29T16:00:00Z</DowntimeEnd>
      <DowntimeInfo>Unscheduled: Power outage</DowntimeInfo>
      <!-- GOCDB Classification in 'Extension' element-->
      <Extension><LocalID>Classification</LocalID>
            <Key>Classification</Key>
            <Value>UNSCHEDULED</Value></Extension>
      <!-- GOCDB Severity in 'Extension' element-->
      <Extension><LocalID>Severity</LocalID>
            <Key>Severity</Key>
            <Value>OUTAGE</Value></Extension>
    </Endpoint>
  </Service>
</Services>
```

Put all Service Endpoints into DownTime

GLUE2 <Extensions> Or Sub-type Specialisations

1) First implementation will support mandatory GLUE2 parameters and the generic <Service> element with <Extensions> to render GOCDB specific data.

2) In the GLUE2 specification doc it states: “For Grid services requiring a richer set of attributes for the Endpoint, specific models MAY be derived by specializing from the Endpoint class and adding new properties or relationships”.

3) However, ‘Endpoint’ element is not abstract – unable to add new Endpoint sub-types without changing XSD.

```
<element name="Endpoint" type="glue:Endpoint_t"
```

4) Consider making Endpoint abstract and using <xsd:subtitutionGroup> so new sub-type specialisations can be defined and profiled (same applies to Services), eg:

```
<xsd:element name=“Service" abstract="true"/>

<xsd:element name=“ServiceX" substitutionGroup=“Service">
    ... ServiceX  content here...
</xsd:element>
```

4) We can then define sub-types:
<EGI_GOC_Service>
<EGI_GOC_Endpoint>

Take advantage tightly constrained/profiled XSD types (xsd:patterns, enums etc)

Discussion Points

- IntefaceName List ?
  - ogf.bes
  - ogf.srm
  - emi.executionservice

  From spec doc and https://github.com/OGF-GLUE/XSD/blob/master/schema/GLUE2.xsd

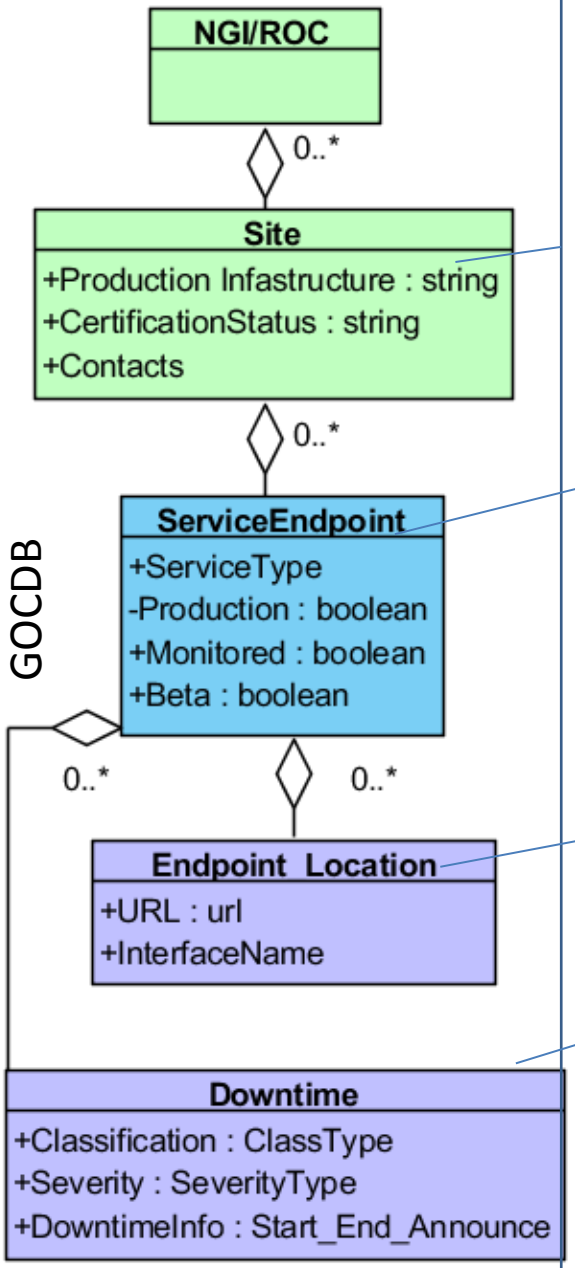
- It was mentioned that the Glue1.3 ServiceType enum values will be used as the InterfaceName list? (folksonomy)
  - https://forge.ogf.org/sf/wiki/do/viewPage/projects.glue-wg/wiki/ServiceTypes

- First implementation will support mandatory GLUE2 parameters and the generic <Service> element (rather than define Service sub-type specialisations, e.g. <ComputingService> and <StorageService>).

- Can subsequently expand and add more GLUE2 attributes or render sub-type specialisations if necessary.

- XSD Suggestion – make Service and Endpoint elements abstract so that <xsd:substitutonGroupS> can be used to provide sub-type specialisations.

Extra slides

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    <Services>
      <Service BaseType="Service">
        <ID>388</ID>
        <Name>ce.grid-ngs.ac.uk</Name>
        <Type>CREAM-CE</Type>
        <QualityLevel>production | testing</QualityLevel>
        <Endpoint BaseType="Endpoint">
          <ID>63562</ID>
          <URL>http://some.url.dl.ac.uk/creamEndpoint</URL>
          <!-- IntefaceName: values? -->
          <InterfaceName>org.glite.ce.CREAM</InterfaceName>
          <!-- QualityLevel: production|testing|development|pre-product
          <QualityLevel>production</QualityLevel>
          <!-- HealthState: warning | critical | ok | other | unknown -
          <HealthState>ok</HealthState>
          <!-- ServiceState: closed | draining | production | queuing -
          <ServingState>production</ServingState>
          <DowntimeAnnounce>2012-03-29T12:30:00Z</DowntimeAnnounce>
          <DowntimeStart>2012-03-29T15:00:00Z</DowntimeStart>
          <DowntimeEnd>2012-03-29T16:00:00Z</DowntimeEnd>
          <DowntimeInfo>Unscheduled: Power outage</DowntimeInfo>
          <!-- GOCDB Classification in 'Extension' element-->
           <Extension>
                <LocalID>Classification</LocalID>
                <Key>Classification</Key>
                <Value>UNSCHEDULED</Value>
           </Extension>
        </Endpoint>
      </Service>
    </Services>
  </AdminDomain>
</Domains>
```


GLUE2