

# IVOA Registry Work Group

## RWP04

### Registry Replication and Interfaces

# Accomplishments

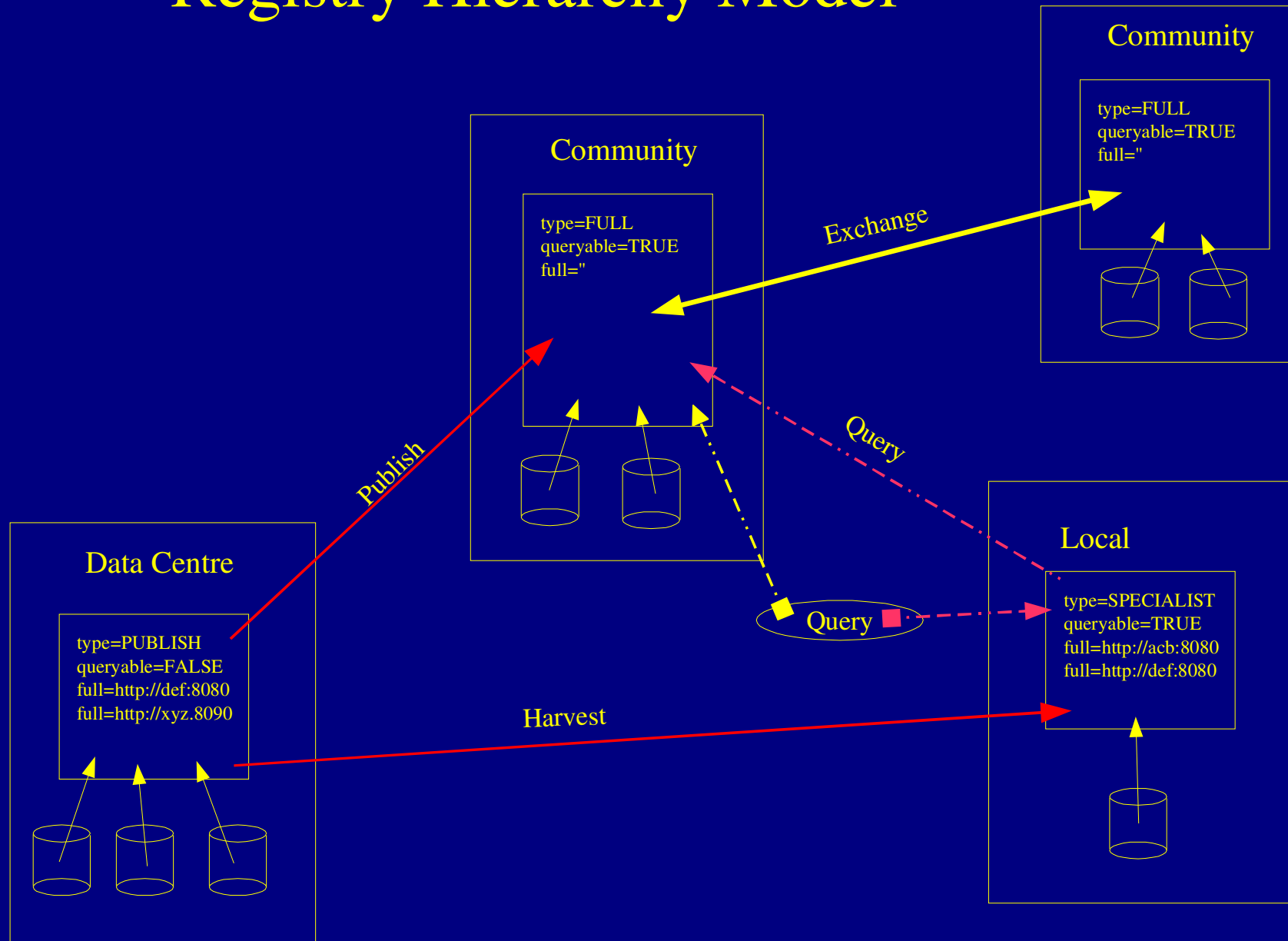
- Agreed upon hierarchical architecture for registries
- Identified different uses for registries
- Made start on UML model
- Started to define interfaces
- Agreed to adopt VOQL once available.

# Requirements

- Distributed
- Low maintenance
- Extensible
- Robust
- Reliable
- Flexible.

# Registry Network Structure

# Registry Hierarchy Model



# Registry Queries

- Convergence with VOQL
- XML.

# Convergence with VOQL

- Advantages
  - Reuse as much query processing code as possible
  - Consistency
  - Simpler clients,
- Disadvantages
  - Too much information
  - Interpretation of query at registry.

# Example Query

```
<?xml version="1.0" encoding="UTF-8"?>
<regQuery>
  <userID>user@institute</userID>
  <query>
    <return>
      <field>OBJID</field>
      <field>CATNAME</field>
      <field>TARGETNAME</field>
      <field>TARGETID</field>
      <field>RA</field>
      <field>DEC</field>
      <field>PRIORITY</field>
      <field>MAG_1</field>
      <field>PROGID</field>
      <field>MAG_2</field>
    </return>
    <criteria>
      <operator type="AND"/>
      <operator type="CONE">
        <field>RA</field>
        <value>161.82385037365</value>
        <field>DEC</field>
        <value>37.2641191920894</value>
        <field>RADIUS</field>
        <value>100</value>
      </operator>
      <operator type="OR">
        <operator type="LESS THAN">
          <field>MAG_1</field>
          <value>14</value>
        </operator>
        <operator type="LESS THAN">
          <operator type="DIFFERENCE">
            <field>MAG_1</field>
            <field>MAG_2</field>
          </operator>
          <value>5</value>
        </operator>
      </operator>
    </criteria>
  </query>
</regQuery>
```



# What we want:

```
<return>  
  <field>OBJID</field>  
  <field>CATNAME</field>  
  <field>TARGETNAME</field>  
  <field>TARGETID</field>  
  <field>RA</field>  
  <field>DEC</field>  
  <field>PRIORITY</field>  
  <field>MAG_1</field>  
  <field>PROGID</field>  
  <field>MAG_2</field>  
</return>
```

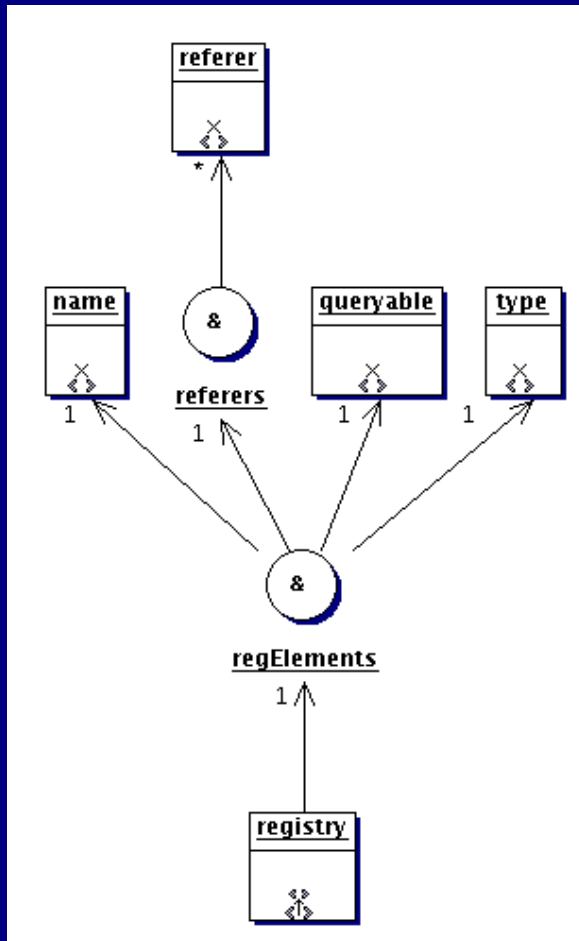
# How we propose to get it:

```
<criteria>
  <operator type="CONE">
    <field>RA</field>
    <value>161.82385037365</value>
    <field>DEC</field>
    <value>37.2641191920894</value>
    <field>RADIUS</field>
    <value>100</value>
  </operator>
  <operator type="OR">
    <operator type="LESS THAN">
      <field>MAG_1</field>
      <value>14</value>
    </operator>
    <operator type="LESS THAN">
      <operator type="DIFFERENCE">
        <field>MAG_1</field>
        <field>MAG_2</field>
      </operator>
      <value>5</value>
    </operator>
  </operator>
</criteria>
```

# Registry Management

- Configuration
- Local management
- Replication / Harvesting / Publication.

# Configuration

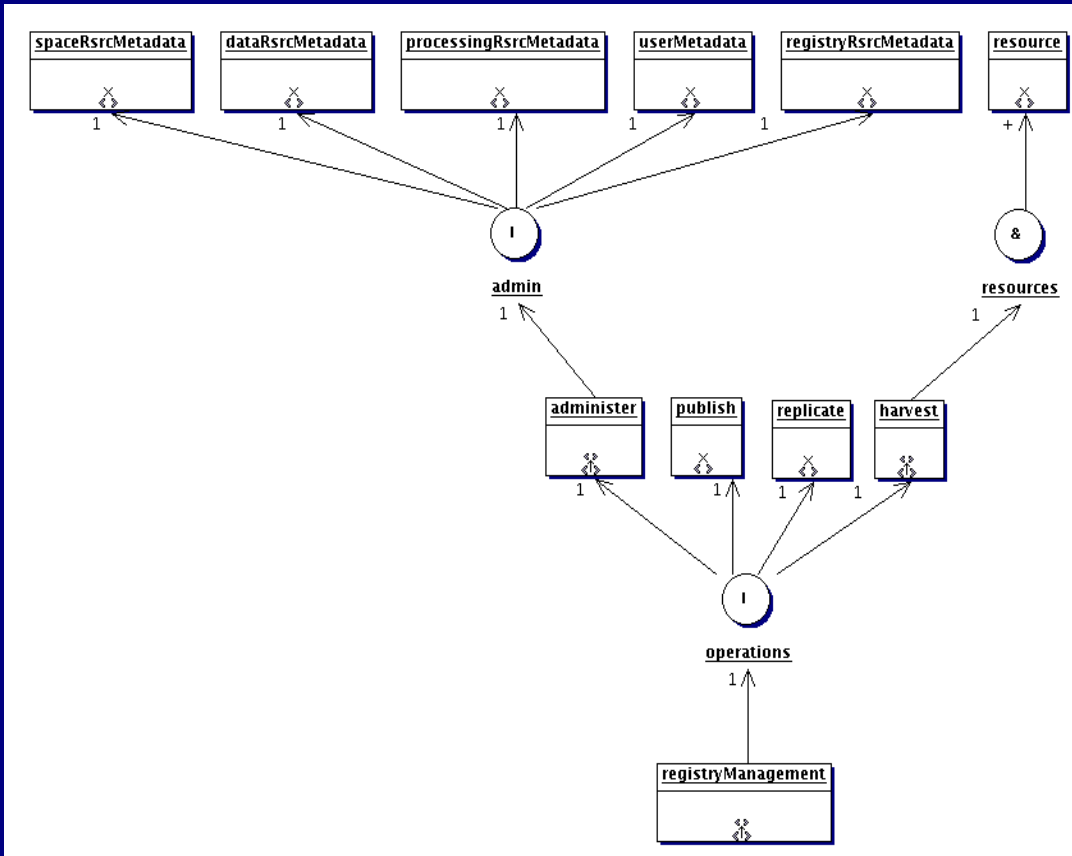


```

<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:element name="registry">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:group maxOccurs="1" minOccurs="1" ref="regElements"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="name">
    <xsd:simpleType>
      <xsd:restriction base="xsd:string"/>
    </xsd:simpleType>
  </xsd:element>
  <xsd:element name="type">
    <xsd:simpleType>
      <xsd:restriction base="xsd:string">
        <xsd:enumeration value="FULL"/>
        <xsd:enumeration value="SPECIALIST"/>
        <xsd:enumeration value="PUBLISHER"/>
      </xsd:restriction>
    </xsd:simpleType>
  </xsd:element>
  <xsd:element name="queryable">
    <xsd:simpleType>
      <xsd:restriction base="xsd:boolean"/>
    </xsd:simpleType>
  </xsd:element>
  <xsd:element name="referer">
    <xsd:simpleType>
      <xsd:restriction base="xsd:anyURI"/>
    </xsd:simpleType>
  </xsd:element>
  <xsd:group name="referers">
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" minOccurs="0" ref="referer"/>
    </xsd:sequence>
  </xsd:group>
  <xsd:group name="regElements">
    <xsd:sequence>
      <xsd:element maxOccurs="1" minOccurs="1" ref="name"/>
      <xsd:element maxOccurs="1" minOccurs="1" ref="type"/>
      <xsd:element maxOccurs="1" minOccurs="1" ref="queryable"/>
      <xsd:group maxOccurs="1" minOccurs="1" ref="referers"/>
    </xsd:sequence>
  </xsd:group>
</xsd:schema>

```

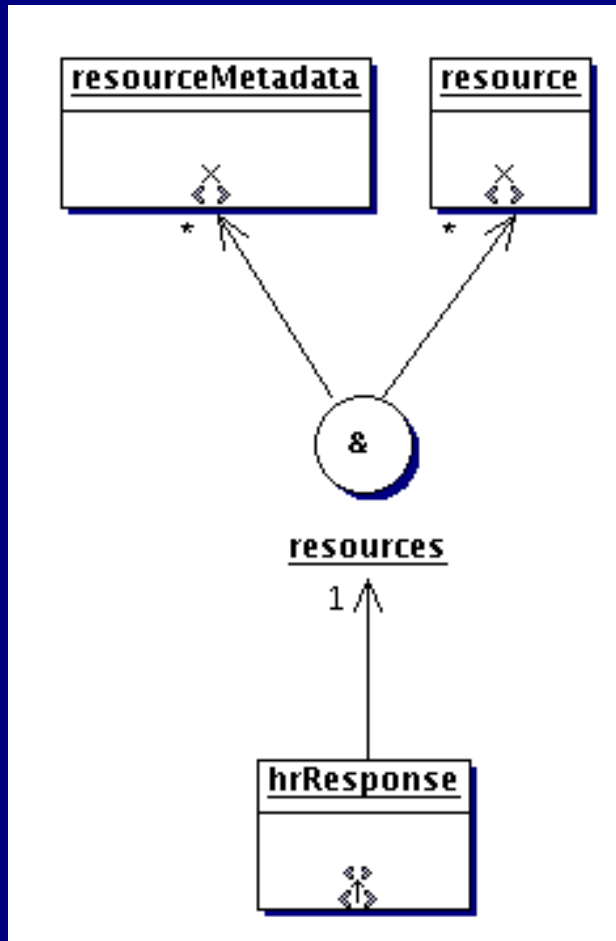
# Local management



```

<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:registryManagement="http://www.w3.org/2001/XMLSchema"
  >
  <xsd:element name="registryManagement">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:group maxOccurs="1" minOccurs="1"
          ref="operations"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="publish">
    <xsd:simpleType>
      <xsd:restriction base="xsd:string"/>
    </xsd:simpleType>
  </xsd:element>
  <xsd:element name="harvest">
    <xsd:complexType>
      <xsd:sequence>
        <xsd:group maxOccurs="1" minOccurs="1"
          ref="resources"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="replicate">
    <xsd:simpleType>
      <xsd:restriction base="xsd:dateTime"/>
    </xsd:simpleType>
  </xsd:element>
  <xsd:element name="administer">
    <xsd:simpleType>
      <xsd:restriction base="xsd:string">
        <xsd:enumeration value="DATA"/>
        <xsd:enumeration value="SPACE"/>
        <xsd:enumeration value="REGISTRY"/>
        <xsd:enumeration value="PROCESSING"/>
        <xsd:enumeration value="USER"/>
      </xsd:restriction>
    </xsd:simpleType>
  </xsd:element>
  </xsd:schema>
  
```

# Replication



```

<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:element name="hrResponse">
    <xsd:simpleType>
      <xsd:restriction base="xsd:long"/>
    </xsd:simpleType>
  </xsd:element>
  <xsd:element name="resourceMetadata">
    <xsd:simpleType>
      <xsd:restriction base="xsd:string"/>
    </xsd:simpleType>
  </xsd:element>
  <xsd:element name="resource">
    <xsd:simpleType>
      <xsd:restriction base="xsd:string"/>
    </xsd:simpleType>
  </xsd:element>
  <xsd:group name="resources">
    <xsd:sequence>
      <xsd:element maxOccurs="unbounded" minOccurs="0"
        ref="resource"/>
      <xsd:element maxOccurs="unbounded" minOccurs="0"
        ref="resourceMetadata"/>
    </xsd:sequence>
  </xsd:group>
</xsd:schema>

```

# Actions

- Further develop UML
- Provide feedback/requirements to VOQL WG
- Define methods for harvesting and replication
- Evaluate role of OAI and GridPP technologies
- Decide if adoption of these technologies is required for IVOA or left as an implementation option.

# Questions

