



# WS-DAI

## GGF 13 DAIS-WG Status Report

---

Mario Antonioletti  
EPCC

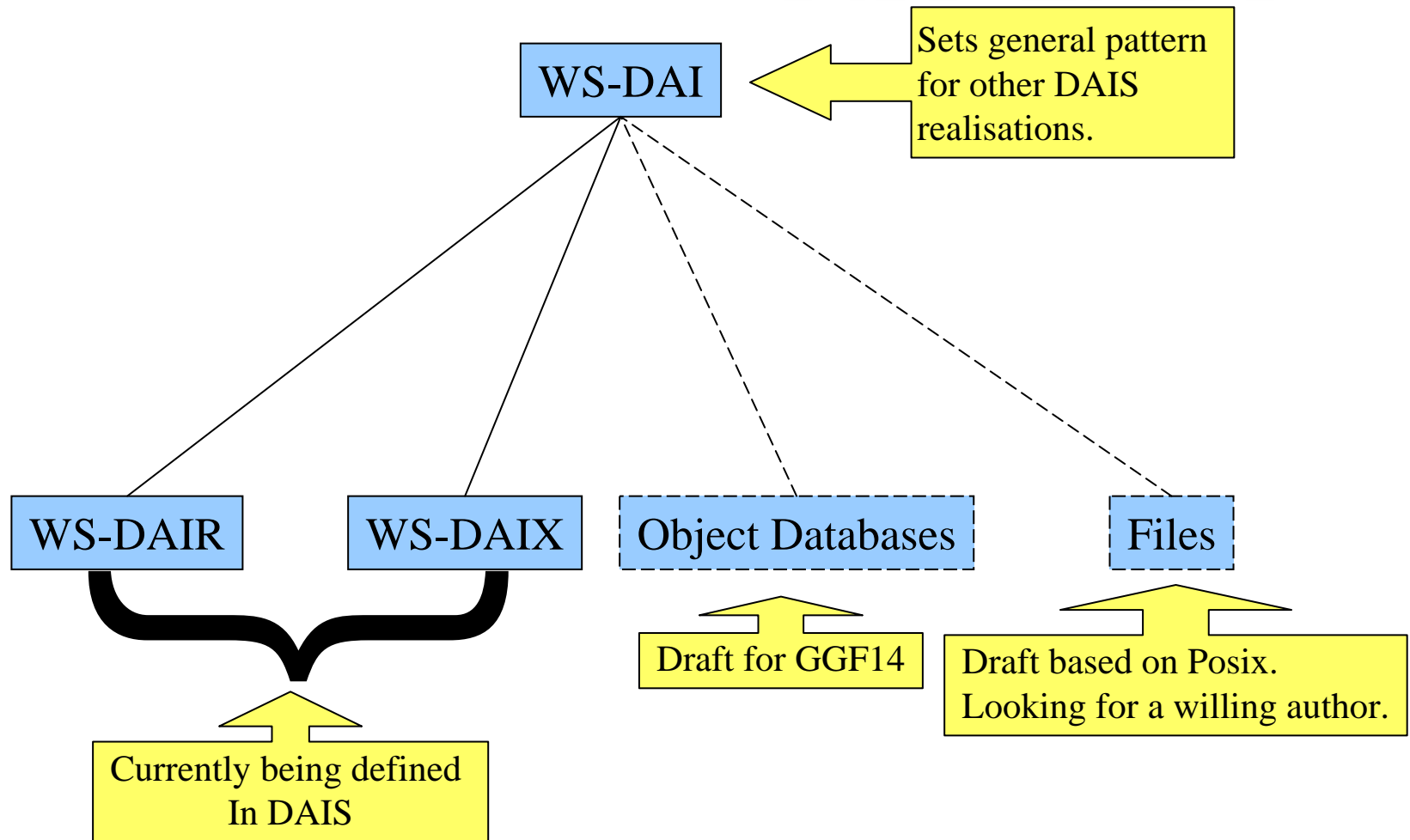
[mario@epcc.ed.ac.uk](mailto:mario@epcc.ed.ac.uk)  
+44 131 650 5141

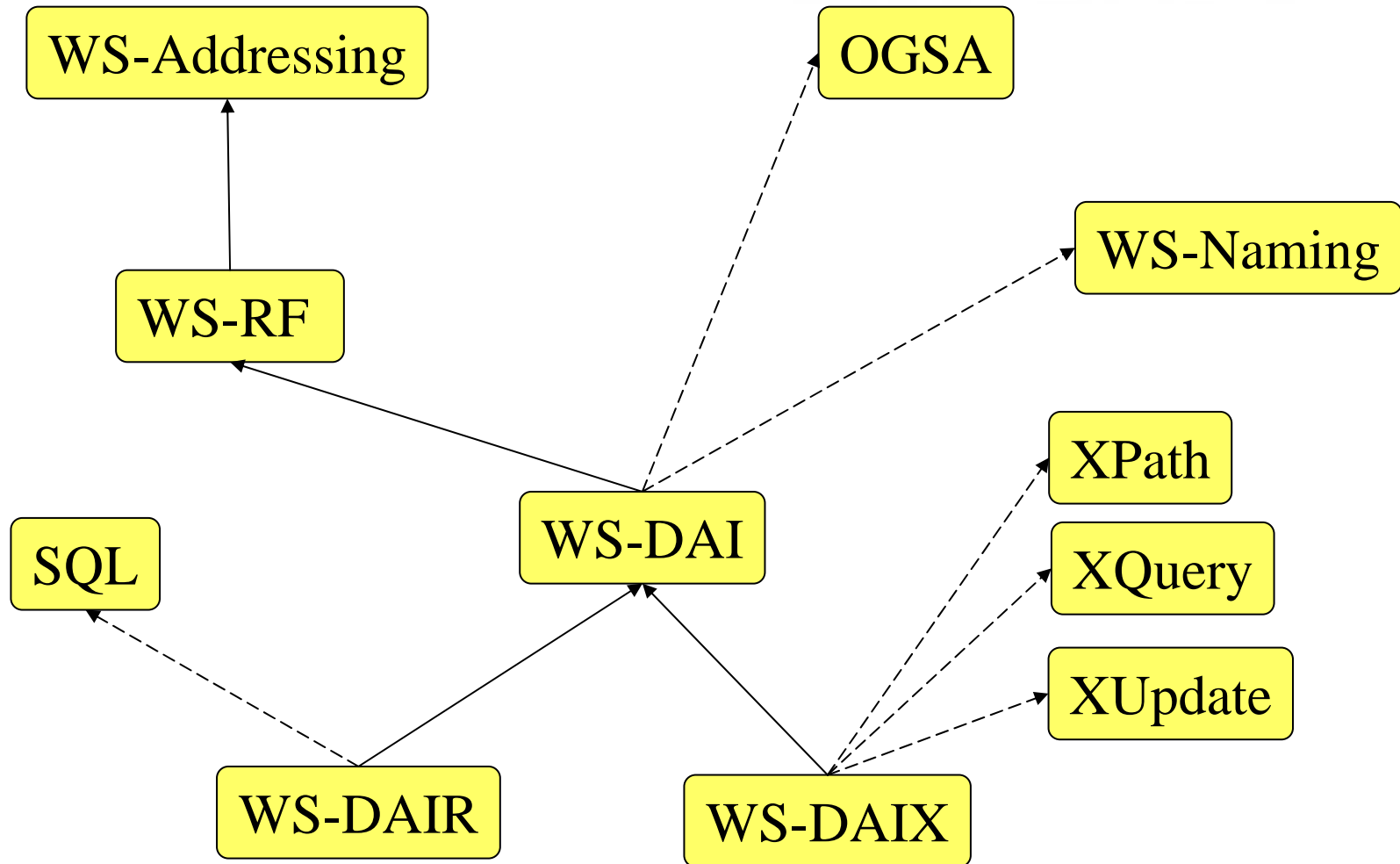
- Background
  - People involved
  - Aims and strategy
  - Specifications overview
  - Specification dependency
  - Definitions
  - Interface types
  - Data access and data factory message patterns
  - Service properties
  - Data service multiplicities
  - Direct and indirect access and some examples
- Progress since GGF12
- Grid forge and outstanding issues
- Future plans
- Conclusions

- Folks involved in spec writing (mainly but not exclusively):
  - Simon Laws (IBM)
  - Norman Paton (University of Manchester)
  - Susan Malaika (IBM)
  - Mario Antonioletti (EPCC)
  - Amy Krause (EPCC)
- Also:
  - Shannon Hastings, Thomas Soddemman, William Sanchez, ...
  - People that attend the telcons ...
- Others are welcome to join ...



- Provide Web Service (WS) interfaces to allow access to data resources in grids.
- Separate core from the realisations.
  - Realisations extend the core.
- Talk about the functional model to underlying mapping.
  - Currently have a WS-RF mapping but position not final.
  - Minimise disruption of external dependencies.





- Data resource (DR):
  - Any system that can act as a source or a sink of data.
  - Scope of group mainly restricted to relational and XML databases.
- A data service (DS):
  - Implements a DAIS specified interface.
- Consumer:
  - An application that exploits a DS to access a DR.

- Data Description
  - Provides metadata about a DR and the relationship between the DR and the DS .
- Data Factory
  - Provides service interface for the creation of derived data resources.
- Data Access
  - Provides access to data through a service interface
- Data Management
  - Manages the relationship between a DS and the DR that it exposes.



- To encourage consistency in the realisations, the following message pattern is provided by WS-DAI:

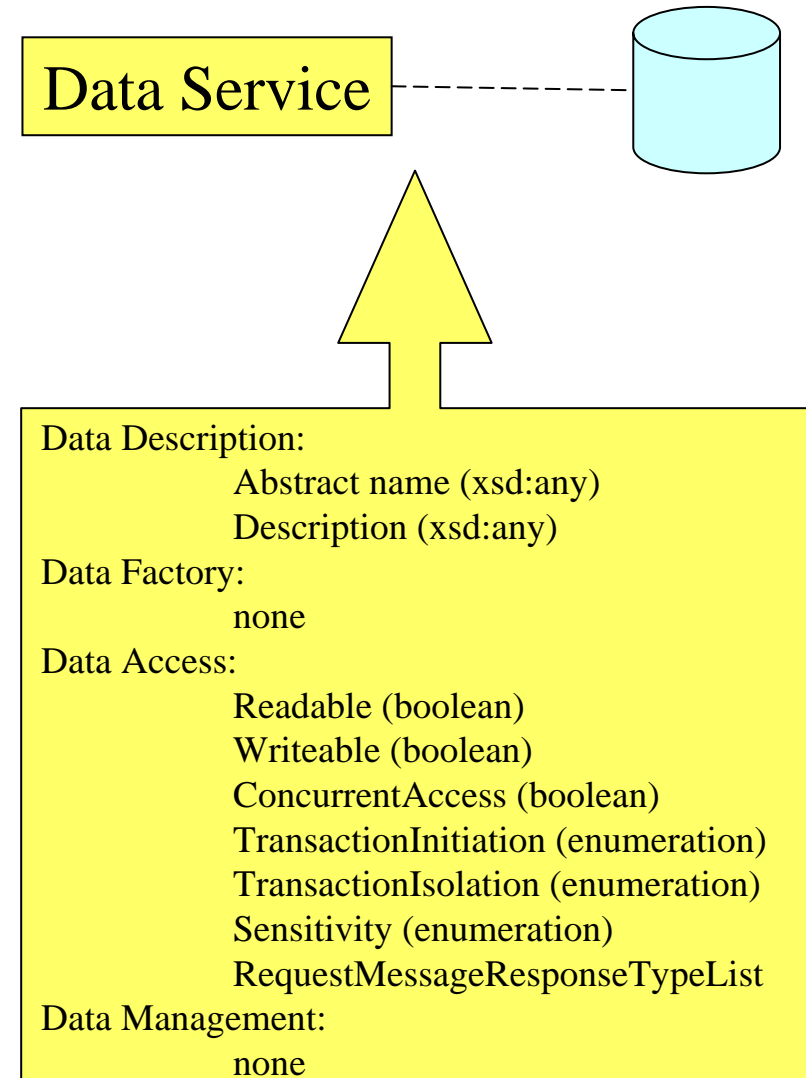
```
<wsdai:RequestMessage>  
  <wsdai:RequestDocument />  
  <wsdai:ResponseFormat />?  
</wsdai:RequestMessage>
```

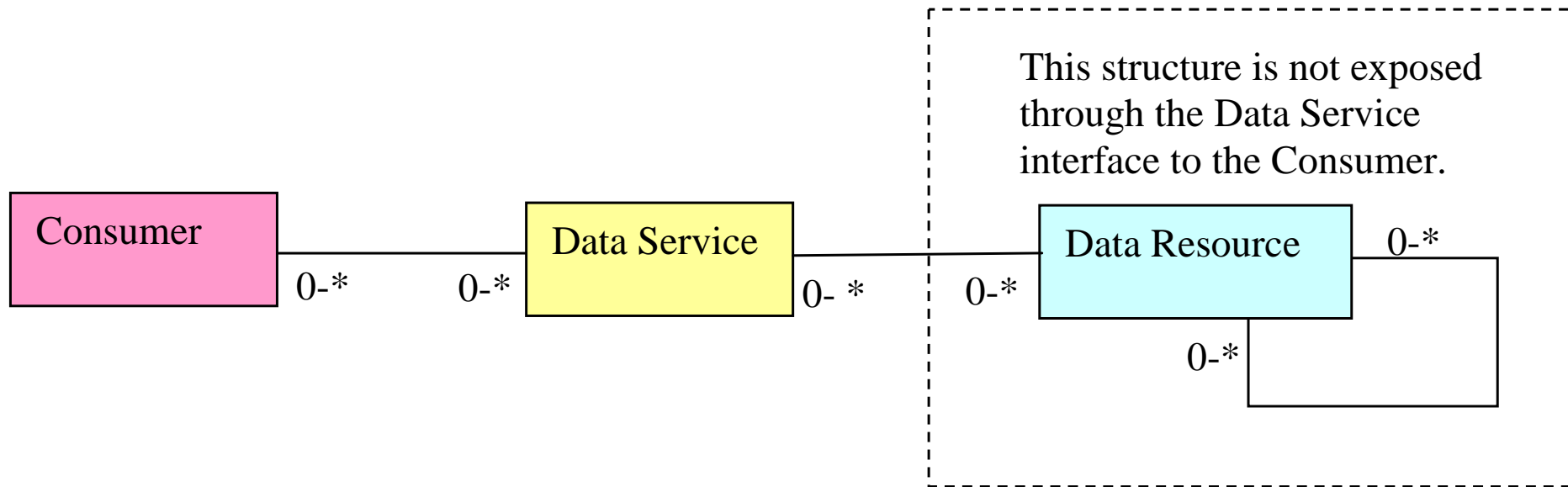
- The ResponseFormat, if present, MUST contain a QName from the *RequestMessageResponseTypeList* informational property.

- To encourage consistency in the realisations, the following message pattern is provided by WS-DAI:

```
<wsdai:RequestMessage>  
  <wsdai:RequestDocument />  
  <wsdai:BehavioralProperties />  
</wsdai:RequestMessage>
```

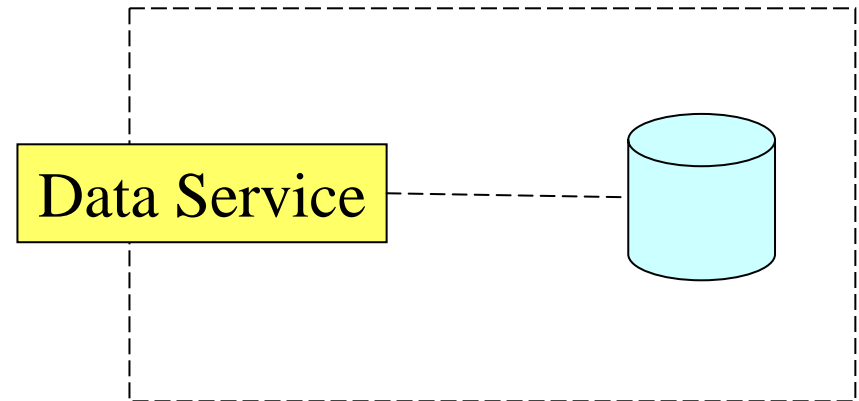
- Describe characteristics of:
  - Data resource
  - Relationship between the DS & DR
- Represented as XML elements
- More added in the realisations if necessary





## Direct delivery

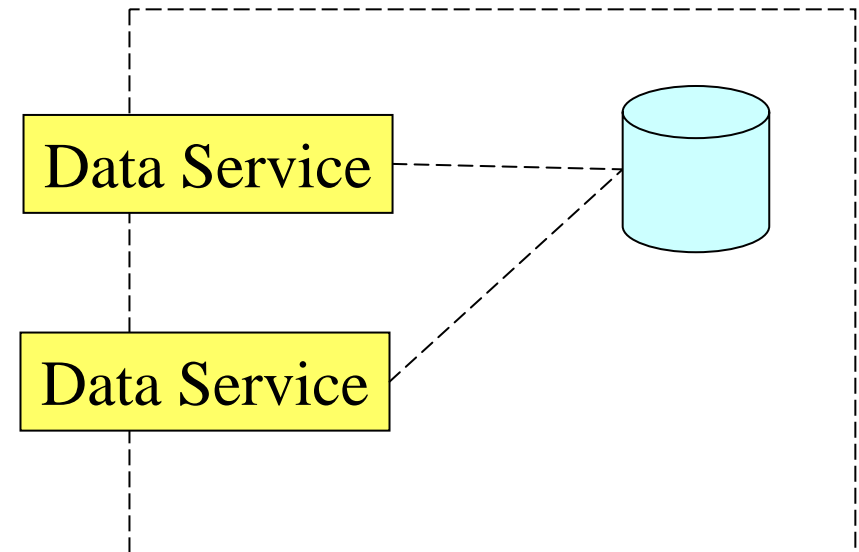
Consumer



## Indirect delivery

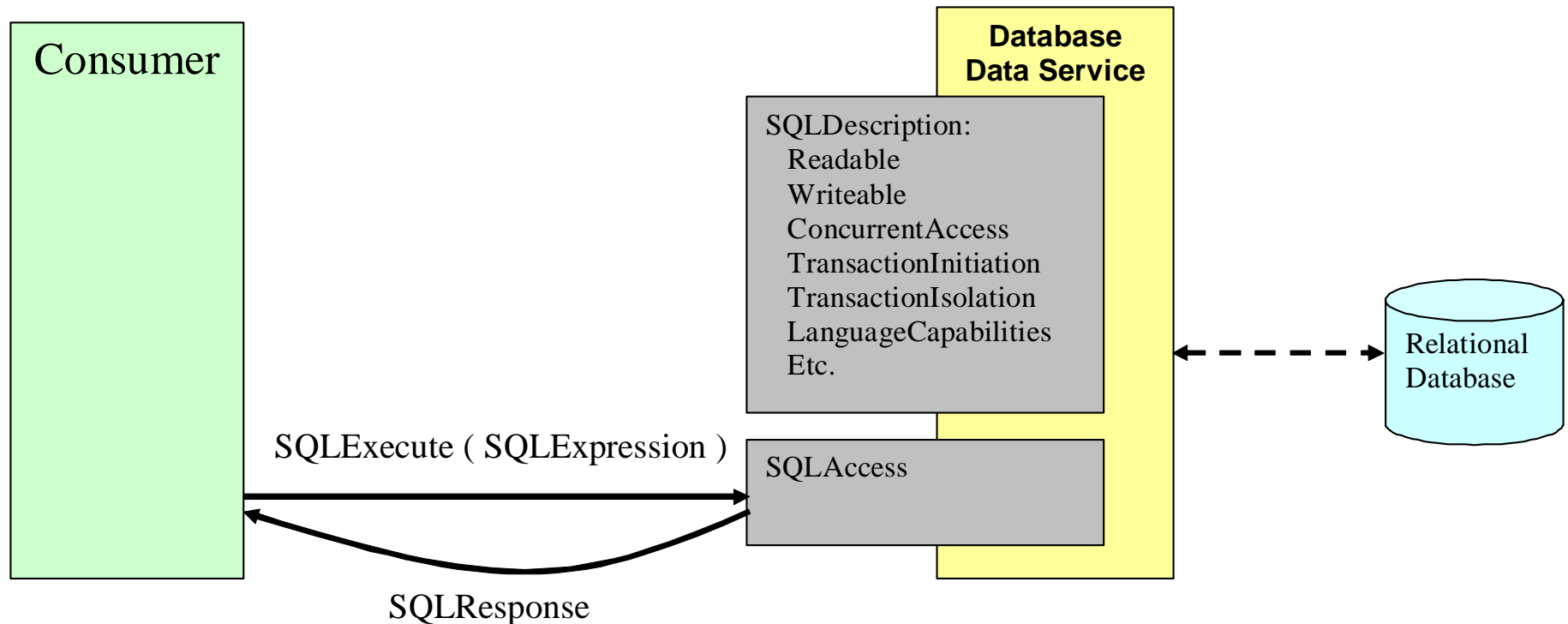
Consumer

Consumer

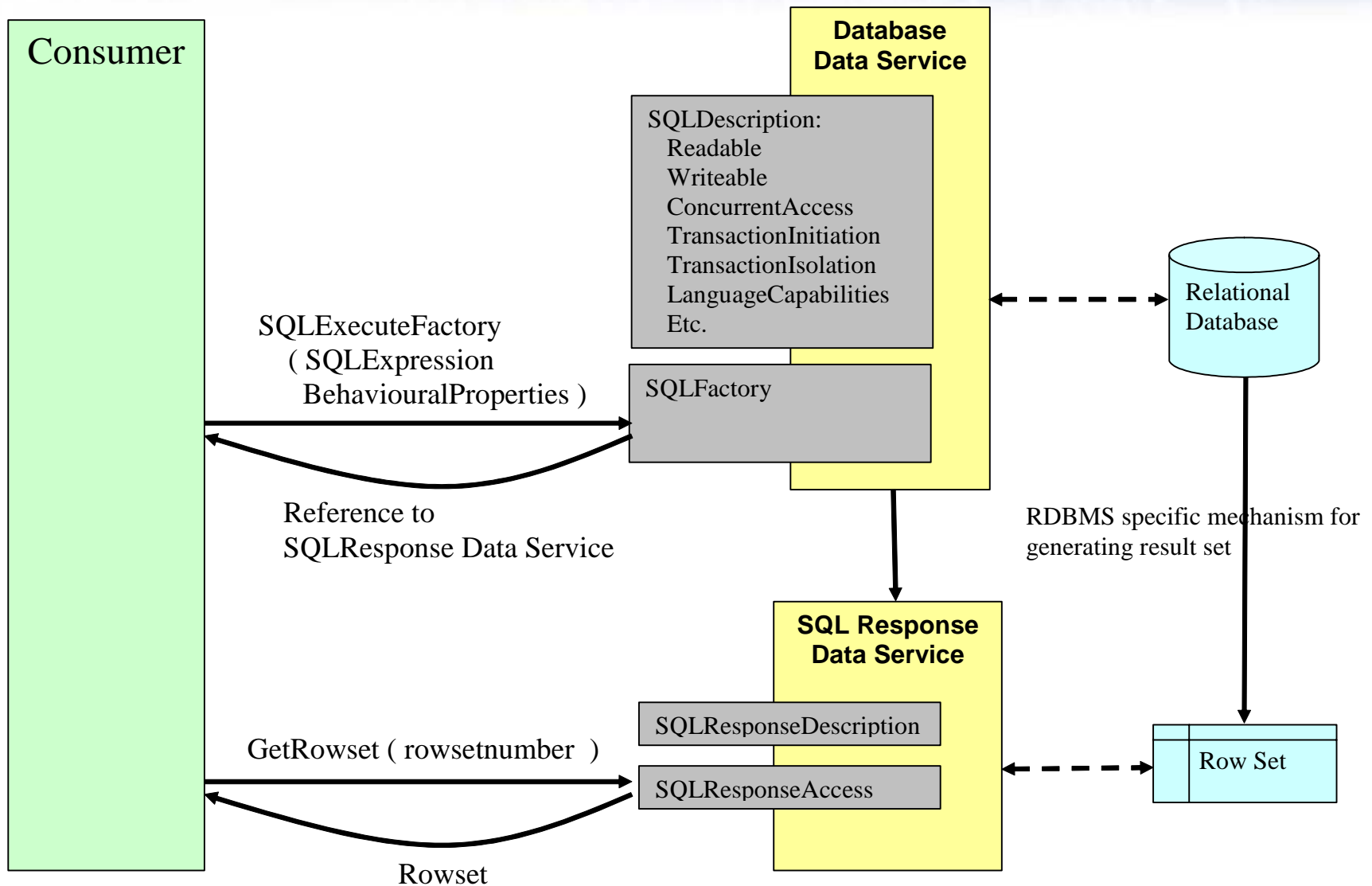




# Direct delivery: a more concrete example



# Indirect delivery: a more concrete example



- Mainly:
  - Rearrangement of material to make the spec easier to read.
  - Fixed typos and tightened up the language.
- Participating with other groups:
  - OGSA Data Design Group.
  - WS-RF.
- Trying to resolve some of the remaining outstanding issues.

Id	Issue	Summary	Status
934	Mechanisms for dynamic specification of request/response types	Finding a way of specifying and advertising the type/data format of data returned to the consumer.	
935	Relationship with other specifications	-	On-going
937	Consider data management interfaces	-	Out of scope? Use WSDM.
968	Definition of a data resource.	Definition too broad.	
972	Exposing access privileges.	Should DAIS expose access privileges or elements derived from the CIM model as behavioural properties? Other suggestions are accounting models.	
977	Disconnected Data Sets.	How does DAIS deal with disconnected data sets.	
1099	Naming	Need to describe how be fit in with OGSA once the naming scheme is complete.	

Id	Issue	Summary	Status
1101	Review Faults proposition	<p>Currently WS-DAI defines a small set of basic faults that must be implemented by all DAIS message exchanges. How this is achieved, other than by cut and paste, is not clear. This is an issue for the wider web services community. We need to check in WSDL 2.0 to see if fault inheritance is supported in any way.</p>	
1102	What security hooks are required	<p>What hooks should be included in the DAIS specifications to enable a security solution? You can imagine that data services will map security credential available in messages to the security credentials required by the data resources. However this mapping is not visible at the service interface.</p>	



Id	Issue	Summary	Status
1103	Top level default data access operation	Provide an access operation in the core specification.	Proposal posted to the DAIS mailing list <a href="http://www-unix.gridforum.org/mail_archive/dais-wg/2005/01/msg00019.html">http://www-unix.gridforum.org/mail_archive/dais-wg/2005/01/msg00019.html</a>
1104	A generic get property message exchange	Currently rely on a WSRF mapping to show how properties of the resource are returned. Should we include a generic getProperties() message exchange to indicate that this function is required of a mapping.	
1196	Scope of DataFactory in Specification	Can create WS-Resources to represent results derived from a data resource but cannot create a WS-Resource to represent the data resource.	
1200	Representation of Properties	Inconsistency in the way properties are used. Some are extensible lists. XML Schema provided is inconsistent.	

- Dependency on draft specifications:
  - WS-Addressing not a standard, WS-ResourceProperties not a standard, ...
  - There is precedence: WSDM, WS-Agreement.
- Resource discrimination:
  - A data service can expose more than one data resource
  - Must be able to target messages to the correct data resource
    - WS-RF uses the SOAP header to do this
      - Replicate the abstract name in the body – got Ok from WSRF folks.
    - Also desirable to specify in the SOAP body
- Choice of a mapping and provision of WSDL
- Tightening up of the language
- Need implementations for sanity check
  - OGSA-DAI project (<http://www.ogsadai.org.uk>):
    - Implementation of WS-DAIR (not public).
    - Implementation of WS-DAIX planned.
  - Others?

- Resolution of issues.
- Choice of an appropriate mapping.
- Provision of WSDL.
- Submission for GGF14.

- Read the draft specifications and comment

<http://forge.gridforum.org/projects/dais-wg/>

- Look under current documents:
  - Grid\_Data\_Service – WS-DAI
  - Relational\_Realisation – WS-DAIR
  - XML\_Realisation – WS-DAIX
- Join the telcons!
- Try and implement it and let us know how you get on.
  - OGSA-DAI will be implementing the DAIS specs.
  - Need a second independent implementation to reach recommendation status