

GGF 10 – DAIS WG Relational Realization Specification Update

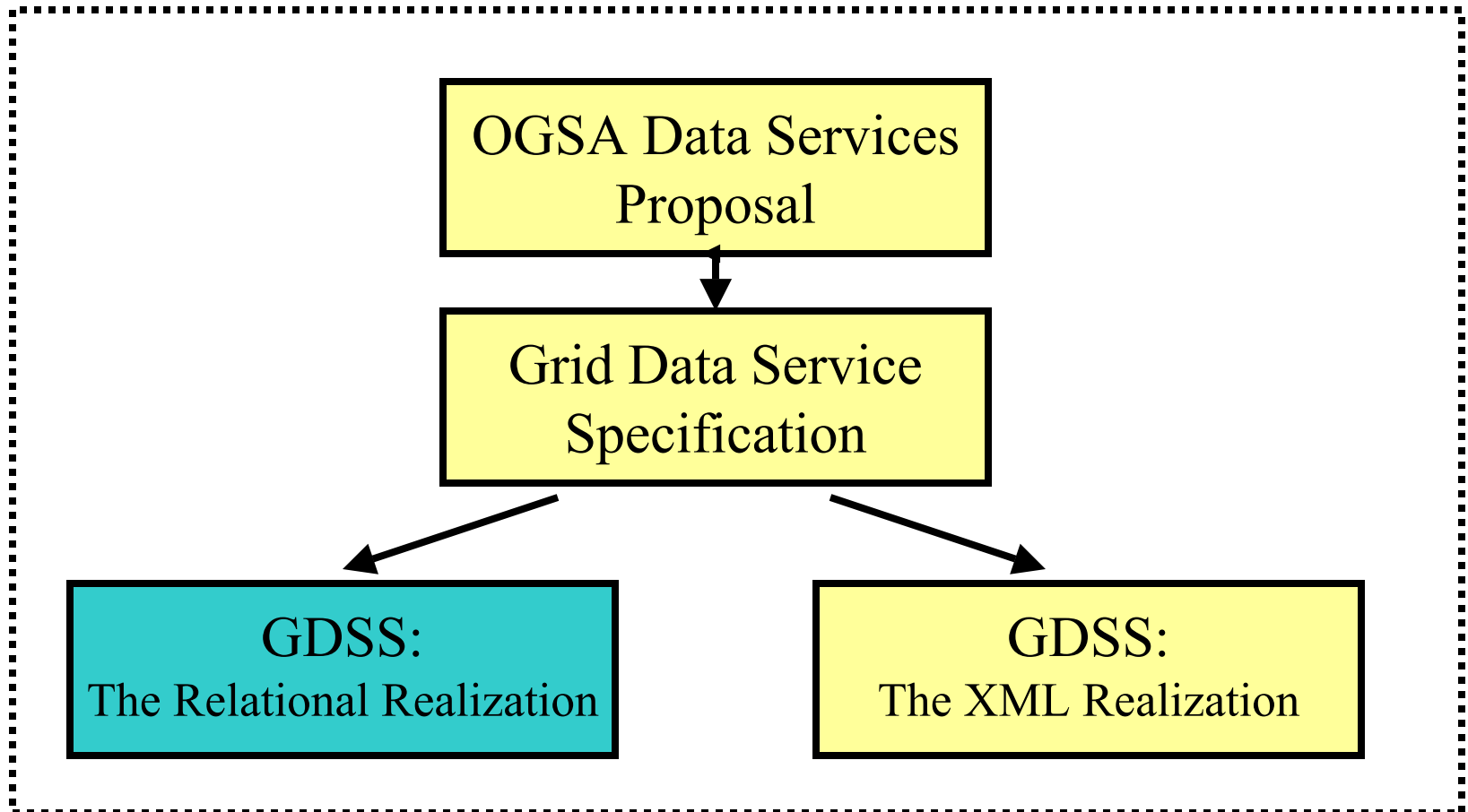
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Agenda

- The relational realization specification at GGF10
 - What hasn't changed
 - What has changed
- Towards GGF11
 - Separating form from function in the relational realization documents
- Topics relevant to the relational realization document
 - Behaviour and controlling terms
 - Standards activities for relational databases
 - DB Operations (Stored Procedures)
- Issues for the relational realization specification
- Actions for the relational realization specification

Current DAIS Document Structure



The Current DAIS Draft Specifications

- Relational Realization Specification (this session)
 - Describes the relational modes of operation, based on Grid Data Services Specification (the base)
 - Defines things that are unique to relational realizations such operations, structures and behavior

Relational Specification - What Hasn't Changed?

- The relational specification as it currently stands is the same as it was at GGF9
 - Still based on OGSi 1.0
 - Still follows the model proposed by the OGSA Data Services Document from GGF9
 - Same portTypes
 - Same model for operation

Relational Specification - What Has Changed?

- Nothing
- The document will undergo changes for GGF11

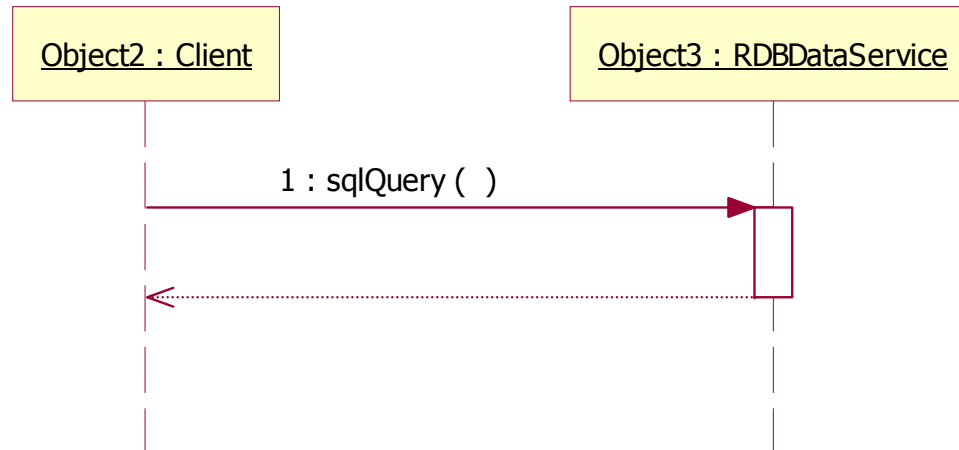
Active Topics Relevant To Relational Realization

- In this session:
 - Behavior and controlling terms
 - Relating to the Grid Data Services Specification
 - Working with XML in a relational context
 - DBOperations (Stored Procedures)
- Others are handling mappings to the OGSA Data Services Document
 - OGSA Data Services
 - Description
 - Access
 - Management
 - Factory
 - Data management
 - Data movement (on
 - Composite requests
 - Meta Data
 - Transactions
 - Security

Behaviour and Control

- Behaviour can be grouped to match the interfaces defined in OGSA Data Services
 - Access
 - Factory
 - Description
 - Management (of services)
- Notification may become an interface
- Terms define control points for behaviour
 - Individual terms could be exposed as meta data, expressed as policy and negotiated as part of an agreement
- Examples are given here. This is not a complete list

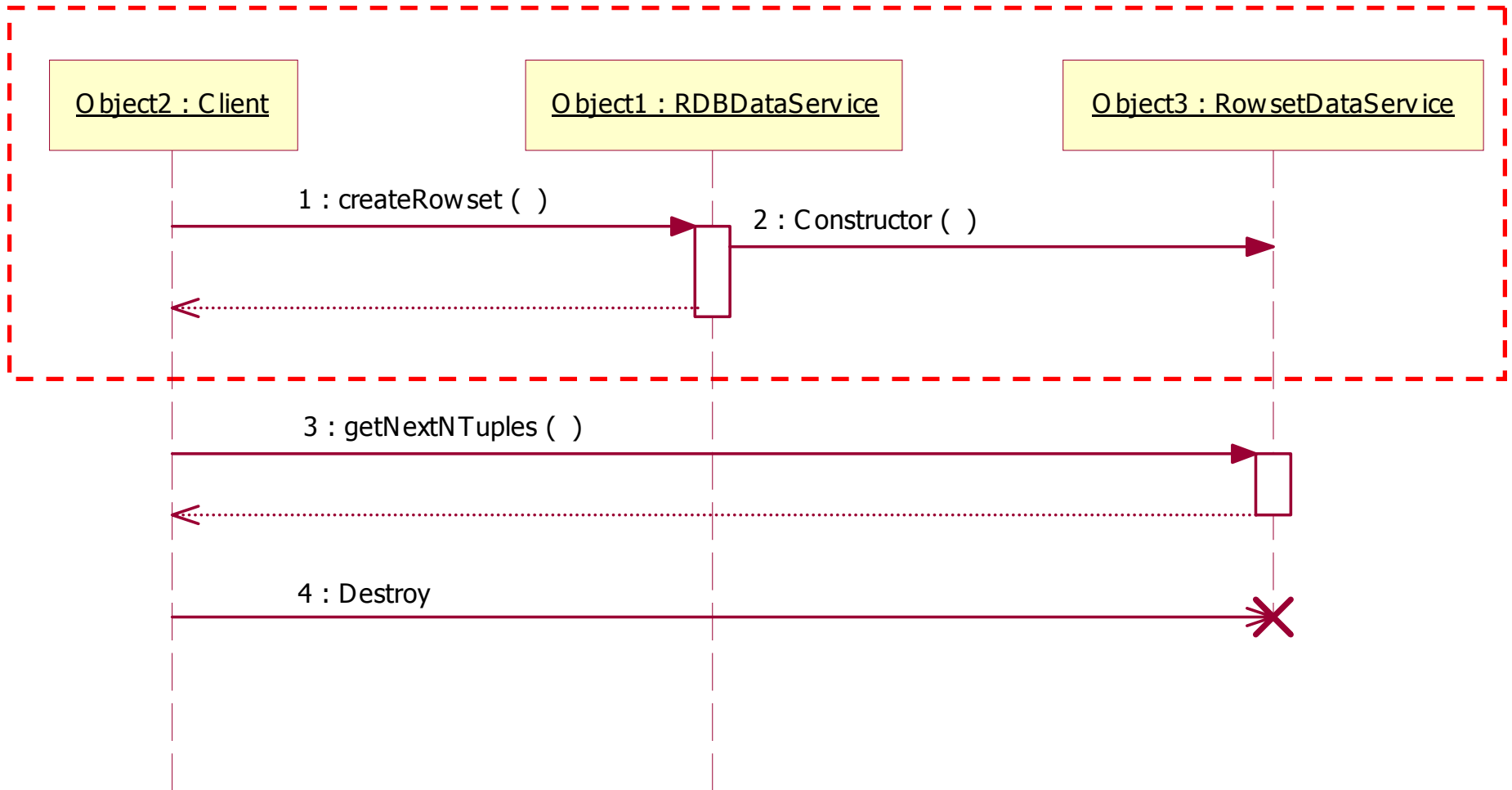
Access



Access Terms

- Access Modes
 - Read, Write, Sequential Access
- Concurrency of operation calls
 - Sequential/Concurrent
- Concurrency of data access
 - Transaction Initiation/Transaction Isolation
- Holdability (JDBC)
 - Access State Persists Over Transaction Boundary
- Sensitivity to external change (JDBC)
 - Sensitive/Insensitive
- TypeMapping
 - Types/Rounding/Faults
- Partial Data
 - Partial Results Acceptable
- Maximum Data Size
 - Maximum size for binding
- Result Format

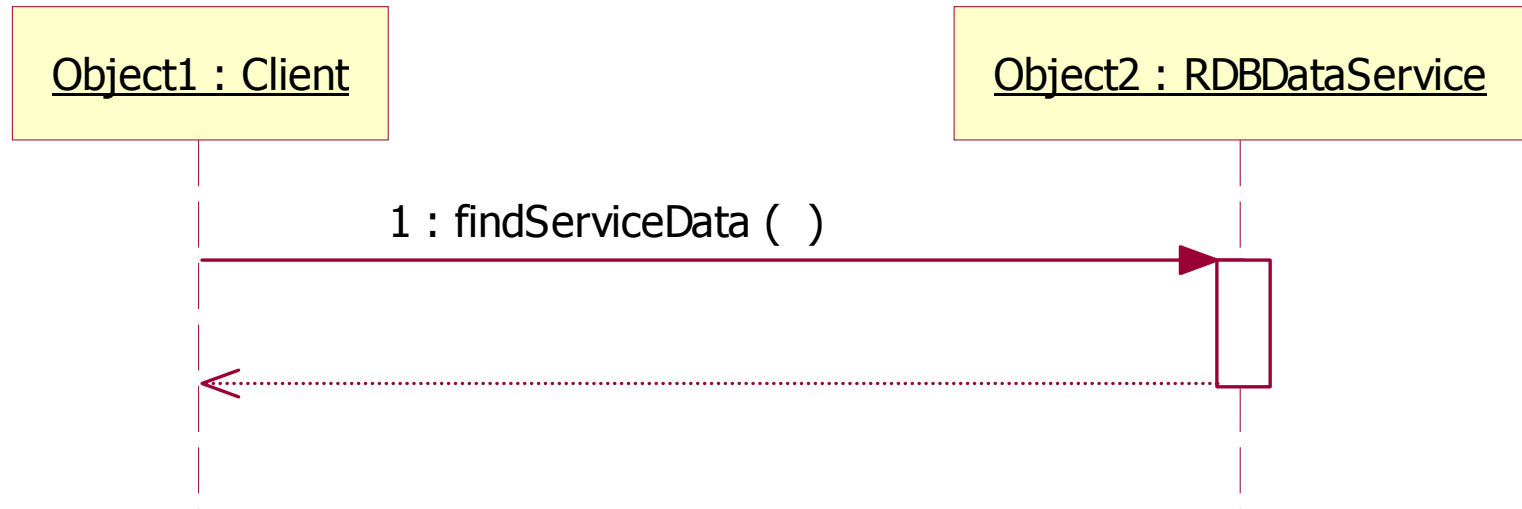
Factory



Factory Terms

- DataMaterialisation
 - Materialise On Create / Materialise On Demand
- Lifecycle
 - Destruction Criteria / Inactivity Settings
- Relationships
 - Behaviour of Parent and Child Relationships - Provenance

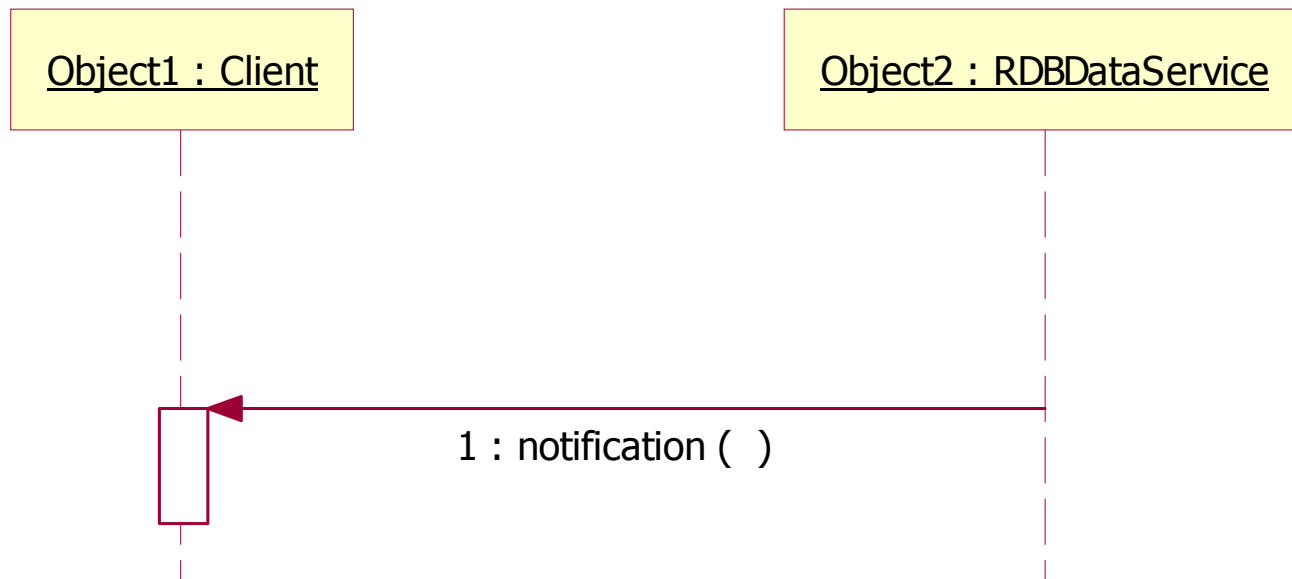
Description



Description Terms

- Sensitivity to external change
 - Sensitive/Insensitive

Notification



Notification Terms

- Granularity
- Sensitivity
- This may be the preserve of INFO-D

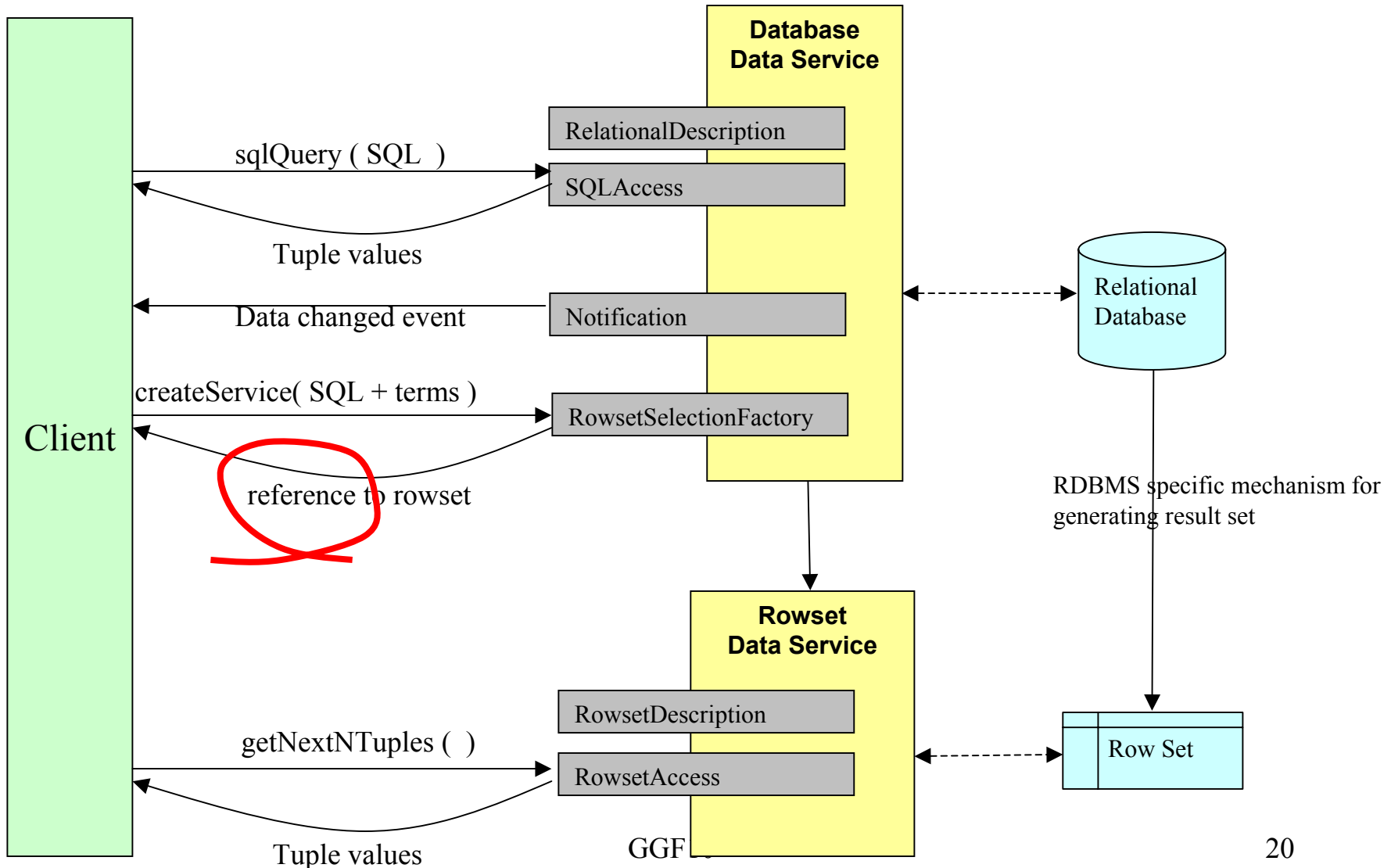
Issues For Base Specification

- Do we have the functions correct?
- Do we have the meta data/description correct?
- How do we describe expected behaviour?
 - What terms?
 - Do we specify precisely in the spec and if so how?
- How does base map to grid infrastructure?
- What is the function of service management?
- What is the overlap with data management?
- What is the overlap with information dissemination?

Actions For Relational Specification For GGF11

- Revisit and decide where to document design principles
- Achieve consistency with new version of Verify function scope
- Verify meta-data/description scope
- Document behaviour model
- Document mapping to emerging grid infrastructure

Reminder Of DAIS Approach



XML and Relational Databases

- Two main XML activities in connection with relational databases
 - Working with XML in a relational setting (without XML tags)
 - When XML is shredded or materialized (published) from regular relational tables
 - SQL 2003 through SQL/XML supports publishing XML from relational data
 - SQL/XML does not yet support shredding
 - Currently vendors support XML shredding in vendor specific ways
 - Working with XML intact (with XML tags)
 - When XML is stored in a single column in a table
 - SQL/XML defines a native XML type for relational databases
 - XMLParse and XMLSerialize operations are defined in SQL 2003
 - SQL/XML will support more operations – including XPath and XQuery on intact XML

Sample Database Tables

Orders

order_key	customer_name	customer_phone	customer_email
1	American Motors	Parts@am.com	800-am-parts

Parts

part_key	color	quantity	price	tax	order_key
156	red	17	17954.55	2.0	1
68	black	36	34850.16	6.0	1
128	red	28	38000.00	7.0	1

Shipments

date	mode	comment	part_key	order_key
2002-03-13	truck	Comment 1	156	1
2002-01-16	fedex	Comment 2	156	1
2002-08-19	boat	Comment 3	68	1
2002-08-19	air	Comment 4	68	1
2002-12-30	truck	Comment 5	128	1

XML

- Impact of XML support in relational databases on Relational Realization:
 - SQL extended for XML functions, XPath, XQuery
 - Query results can include XML before the service
 - Additional metadata
 - XML type
 - XML schemas stored database