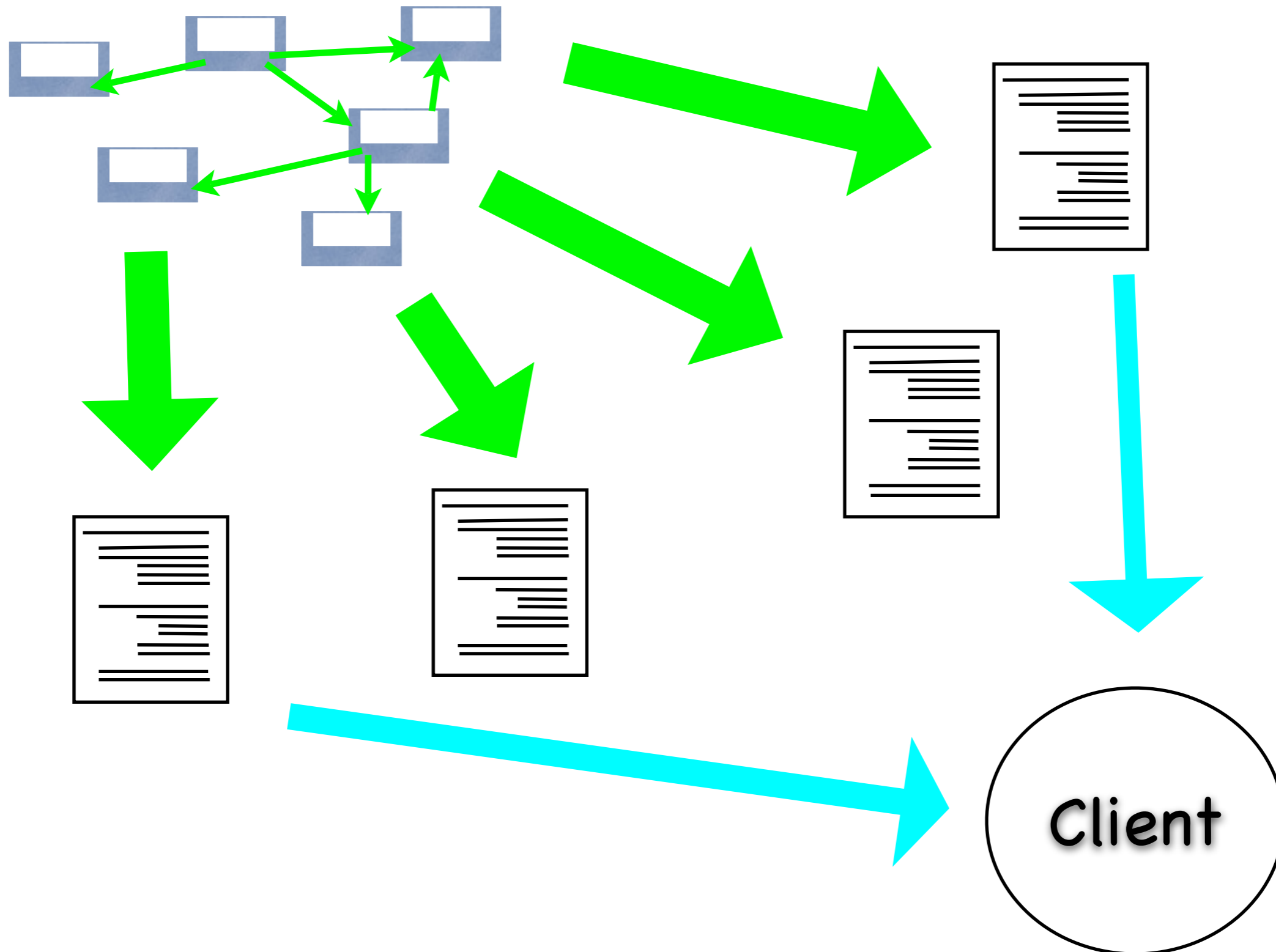


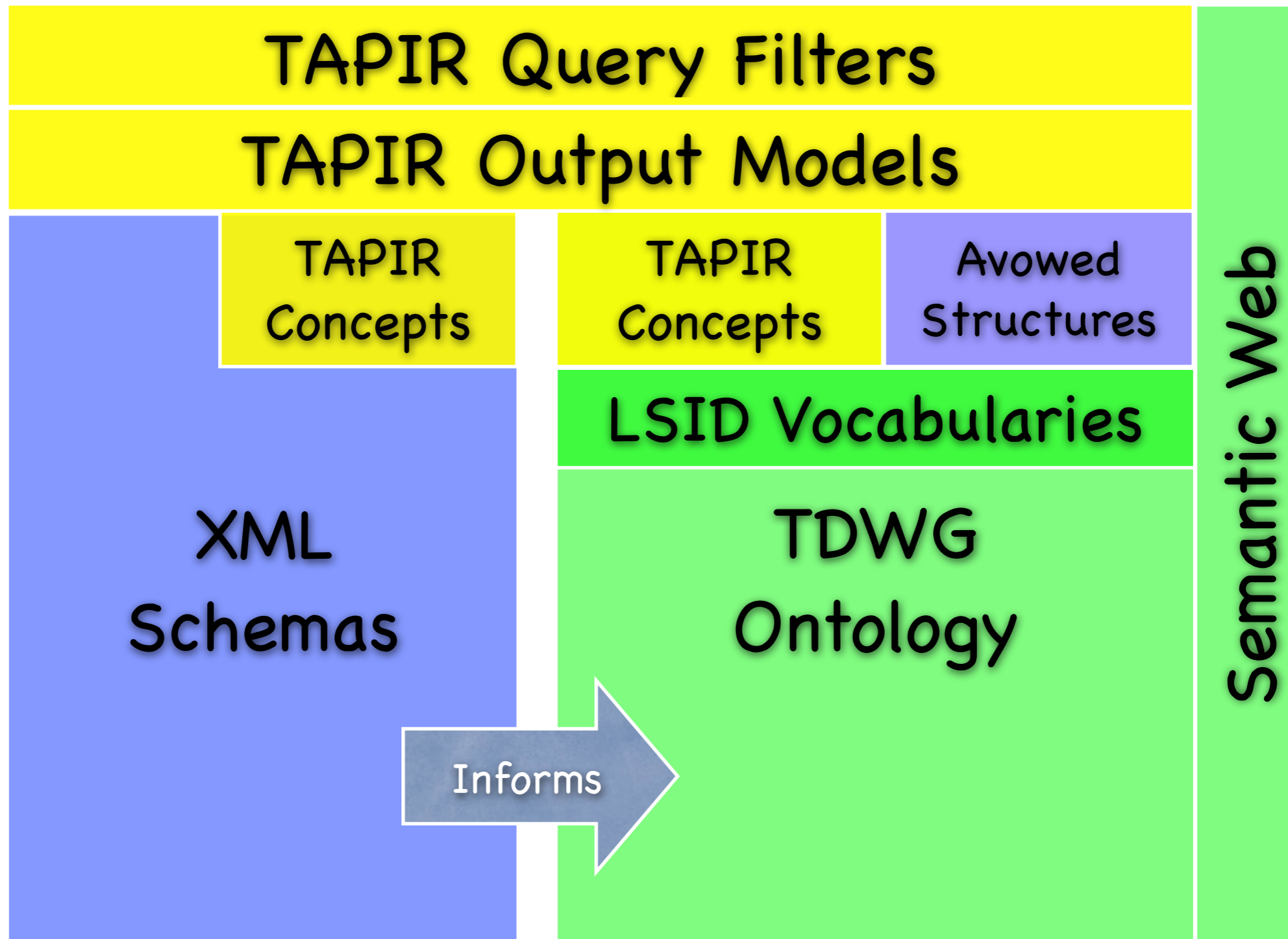
RDF Over TAPIR

Roger Hyam

Technical Architect

TDWG Infrastructure Project







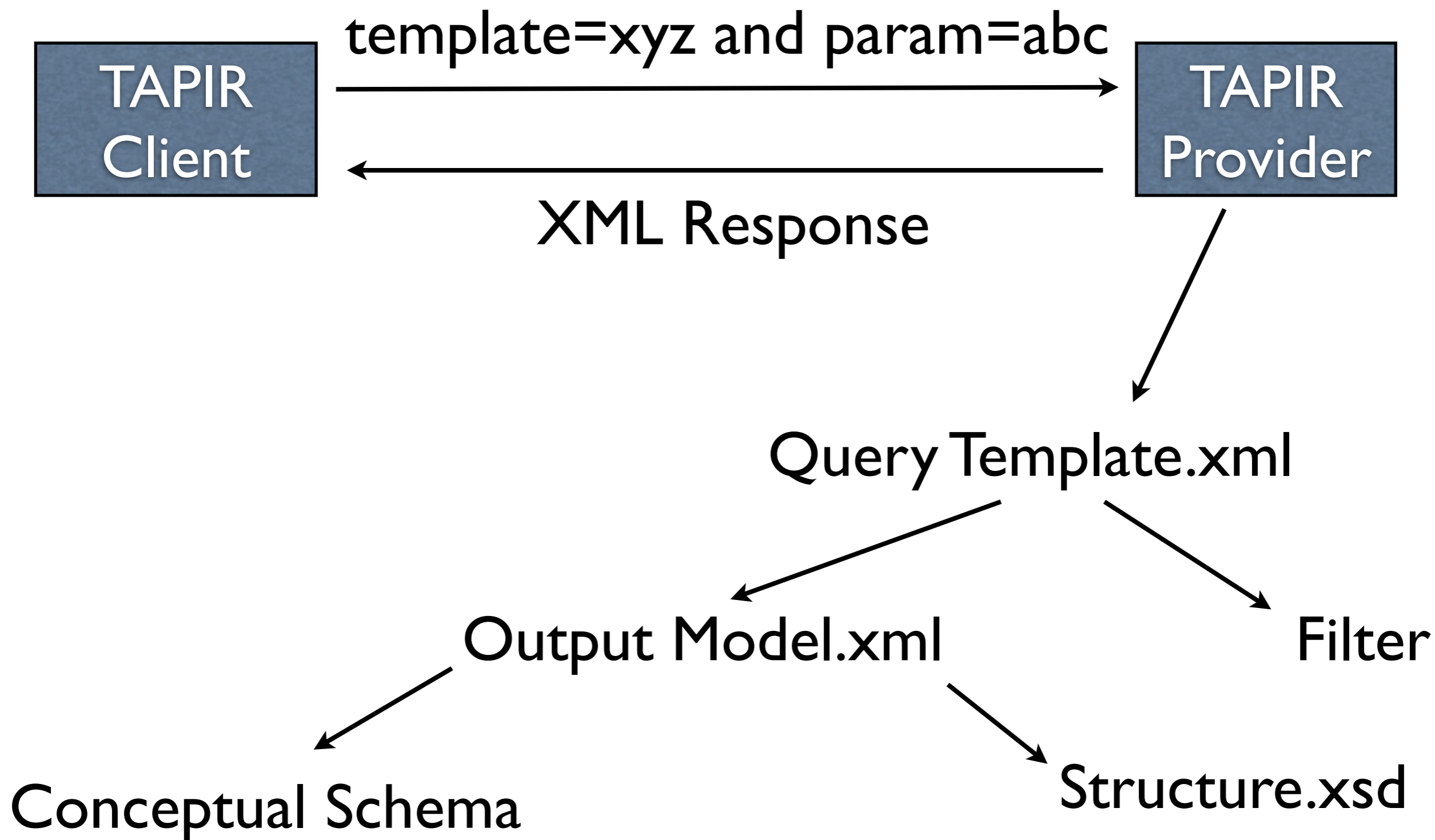
XML
Schema

Dear Tapir Provider

*Please send me some **XML** that has the structure defined in this **XML Schema**.*

Many Thanks,

Grateful Client



```

- <rdf:RDF>
  - <to:TaxonOccurrence rdf:about="urn:lsid:rbge.lsid.tdwg.org:accessions:18208523">
    <dc:title>Acc: 18208523 - Picea abies (L.) H.Karst.</dc:title>
    <dc:identifier>18208523</dc:identifier>
    <owl:sameAs rdf:resource="http://lsid.tdwg.org/urn:lsid:rbge.lsid.tdwg.org:accessions:18208523"/>
    <dc:publisher>Royal Botanic Garden Edinburgh</dc:publisher>
    <dcterms:license rdf:resource="http://www.rbge.ac.uk/license"/>
    <dcterms:rightsHolder rdf:resource="http://www.rbge.ac.uk"/>
    <dcterms:created>1990-07-26</dcterms:created>
    <dcterms:modified>1998-01-09 00:00:00</dcterms:modified>
    <to:identifiedToString>Picea abies (L.) H.Karst.</to:identifiedToString>
  - <to:identifiedTo>
    - <to:Identification>
      <tcom:taxonomicPlacementFormal>PINACEAE, PICEA</tcom:taxonomicPlacementFormal>
      <tcom:taxonomicPlacementInformal>conifer</tcom:taxonomicPlacementInformal>
    </to:Identification>
  </to:identifiedTo>
  <to:individualCount>1</to:individualCount>
  <to:kindOfSpecimenString>Living material</to:kindOfSpecimenString>
  - <to:procedureDescriptor>
    From a cultivated plant not of known wild origin.
  </to:procedureDescriptor>
  <to:specimenID>18208523</to:specimenID>
</to:TaxonOccurrence>
</rdf:RDF>

```

```

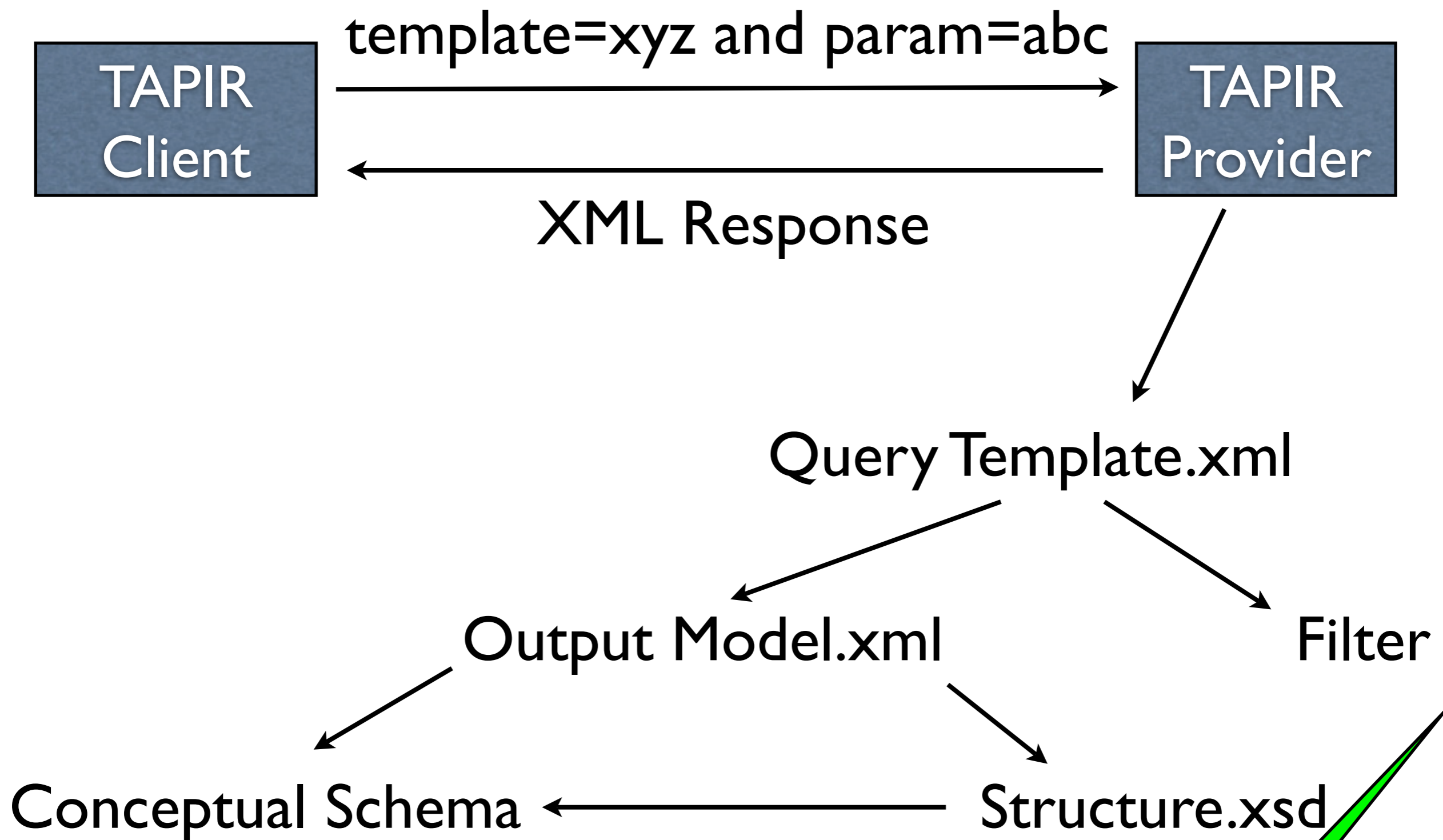
<xs:schema elementFormDefault="qualified" targetNamespace="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
  <xs:import namespace="http://purl.org/dc/elements/1.1/" schemaLocation="../lib/dc.xsd"/>
  <xs:import namespace="http://rs.tdwg.org/ontology/voc/TaxonOccurrence#"
    schemaLocation="TaxonOccurrence_content.xsd"/>
  <xs:import namespace="http://www.w3.org/2002/07/owl#" schemaLocation="../lib/owl.xsd"/>
  - <xs:element name="RDF">
    - <xs:complexType>
      - <xs:sequence>
        <xs:element ref="to:TaxonOccurrence" minOccurs="0" maxOccurs="unbounded"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:attribute name="about" type="xs:anyURI"/>
    <xs:attribute name="resource" type="xs:anyURI"/>
  </xs:element>
</xs:schema>

```

```

<xs:schema elementFormDefault="qualified" targetNamespace="http://rs.tdwg.org/ontology/voc/TaxonOccurrence#">
  <xs:import namespace="http://purl.org/dc/elements/1.1/" schemaLocation="../lib/dc.xsd"/>
  <xs:import namespace="http://purl.org/dc/terms/" schemaLocation="../lib/dcterms.xsd"/>
  <xs:import namespace="http://www.w3.org/1999/02/22-rdf-syntax-ns#" schemaLocation="../lib/rdf.xsd"/>
  <xs:import namespace="http://www.w3.org/2002/07/owl#" schemaLocation="../lib/owl.xsd"/>
  <xs:import namespace="http://rs.tdwg.org/ontology/voc/Common#" schemaLocation="../lib/tcom.xsd"/>
  <xs:import namespace="http://rs.tdwg.org/ontology/voc/TaxonConcept#" schemaLocation="TaxonConcept.xsd"/>
  <xs:import namespace="http://rs.tdwg.org/ontology/voc/Team#" schemaLocation="Team.xsd"/>
  <xs:import namespace="http://www.w3.org/1999/02/22-rdf-syntax-ns#" schemaLocation="../lib/rdf.xsd"/>
+ <xs:annotation></xs:annotation>
- <xs:element name="TaxonOccurrence">
  - <xs:complexType>
    - <xs:sequence>
      <!-- external vocabularies -->
      <xs:element ref="dc:title" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="dc:identifier" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="owl:sameAs" minOccurs="0" maxOccurs="unbounded"/>
      <!-- ownership -->
      <xs:element ref="dc:creator" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="dc:contributor" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="dc:publisher" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="dcterms:license" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="dcterms:rightsHolder" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="dcterms:accessRights" minOccurs="0" maxOccurs="unbounded"/>
      <!-- dates -->
      <xs:element ref="dc:date" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="dcterms:created" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="dcterms:dateSubmitted" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="dcterms:modified" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element ref="dcterms:issued" minOccurs="0" maxOccurs="unbounded"/>

```

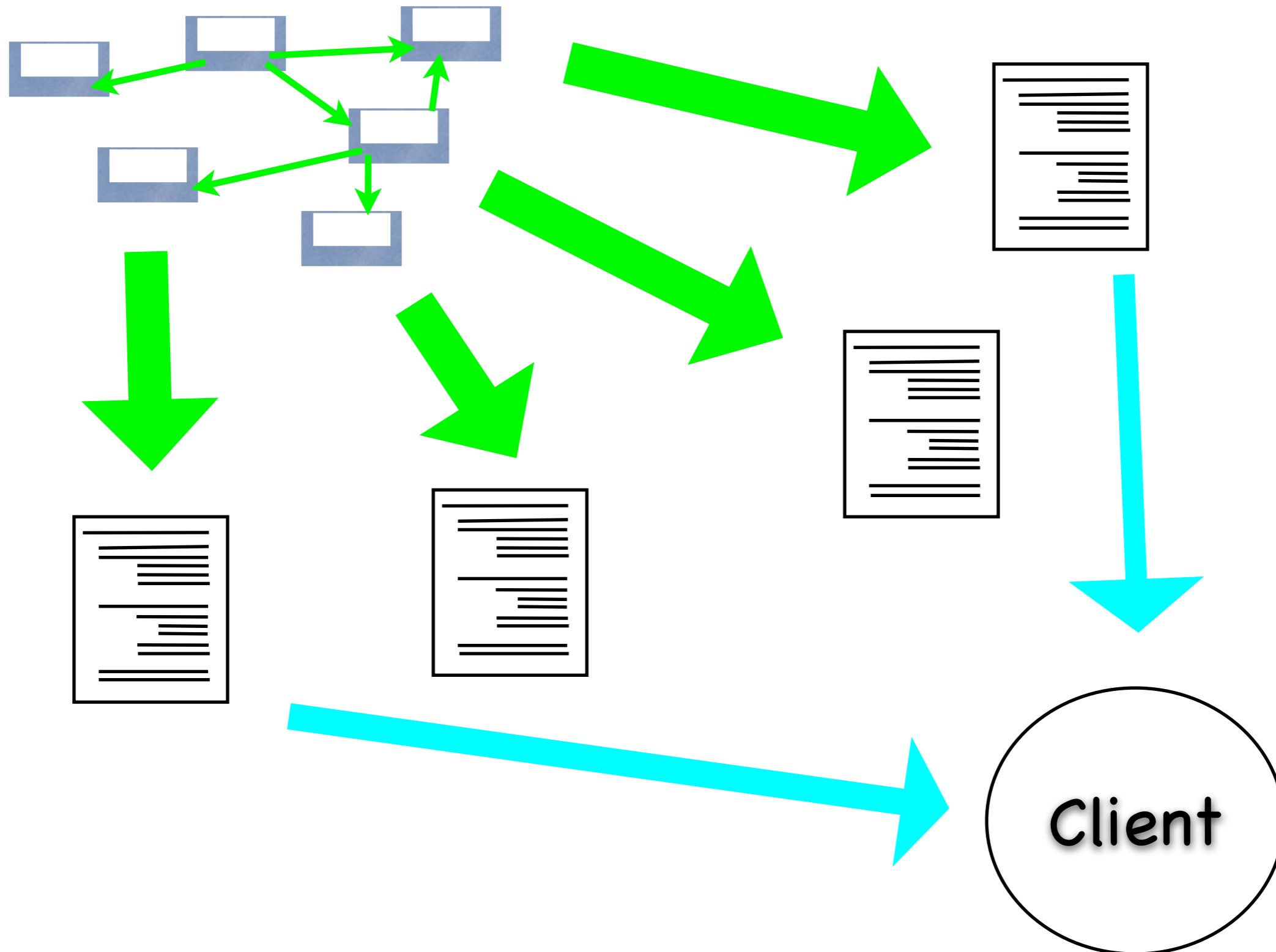


OAI-PMH

- Open Archives Initiative
- Protocol for Metadata Harvesting
- XML based
- Harvest only
- Similar approach works

SPARQL

- W3C 'official' RDF query protocol
- No XML Schemas needed
- Immature and Resource Hungry



More detailed walk through of these ideas

<http://roger.tdwg.gbif.org/>