

CELEBRATE: LOM Queries

Katholieke Universiteit Leuven

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David Massart, European
Schoolnet

Outline

- The European Learning Network (ELN)
- The ELN Clients
- Celebrate BS General Architecture
- LOM Queries
- LOM Query Processing
- LOM Query Data Model
- Checked LOM Queries

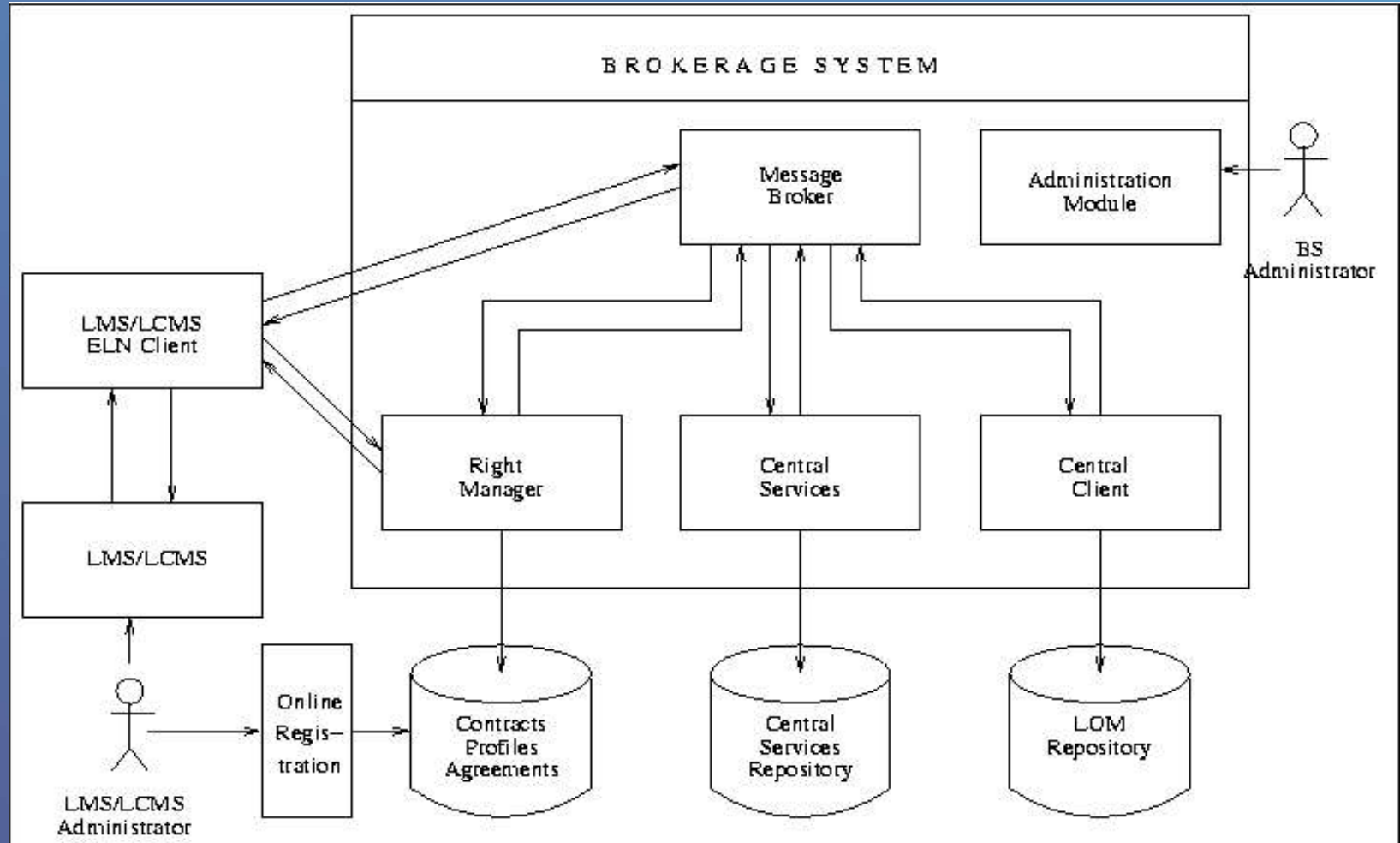
The European Learning Network

- The CELEBRATE project is developing a system to support a European Learning Network (ELN)
- The backbone of this network is a Brokerage System (BS), to which Clients connect
- No direct exchange between Clients is allowed, except those explicitly authorized by the BS
- Clients are:
 - Learning Management Systems (LMS)
 - Learning Content Management Systems (LCMS)
 - A Demonstration Portal

The Clients

- Can have their own:
 - LOM Repository
 - LO Repository
- Communicate with the BS via an “ELN Client” that:
 - Presents a simplified API (encapsulation of the different networking protocols (JMS, SOAP))
 - Focuses on messages

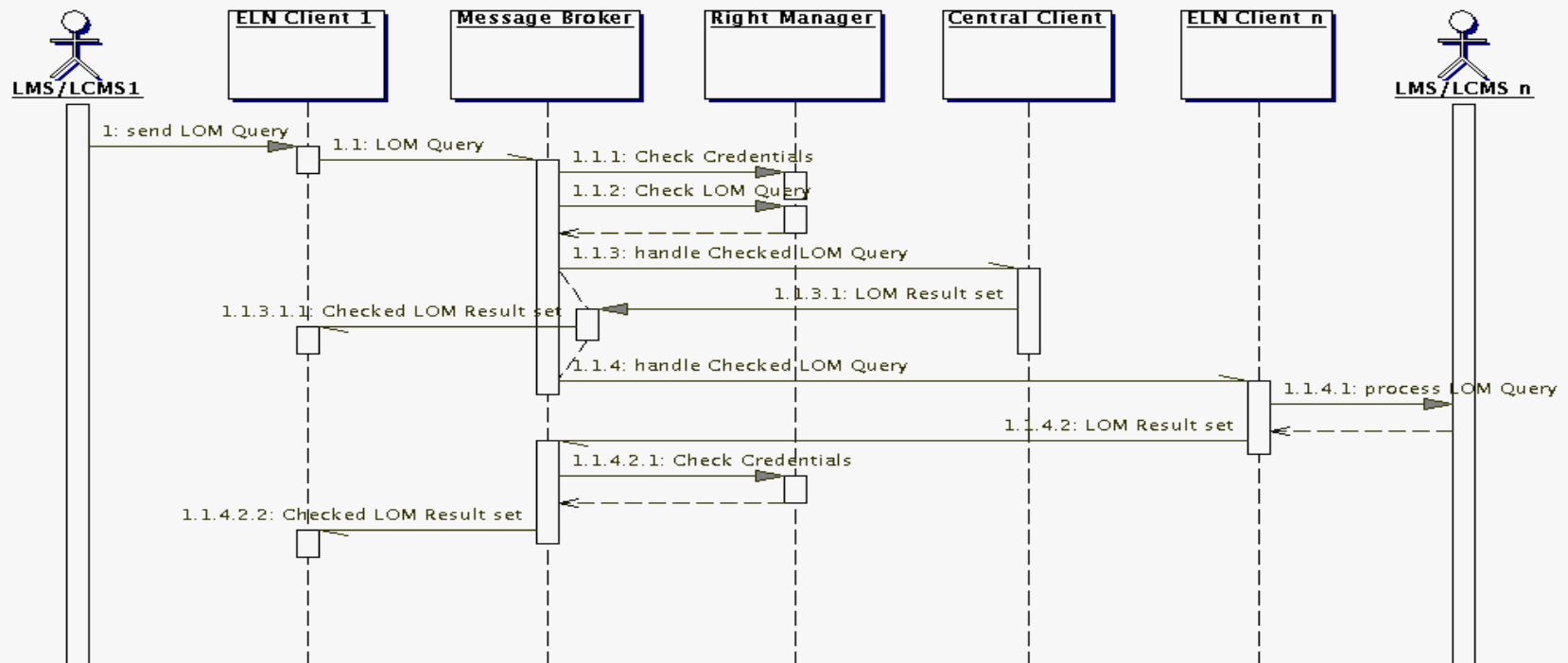
General Architecture



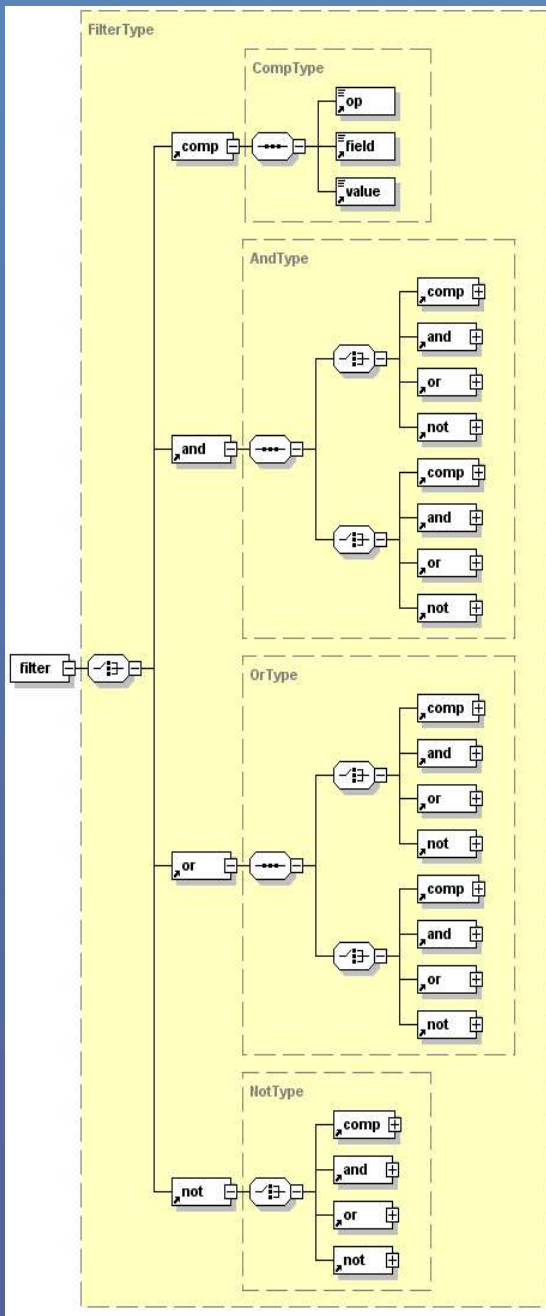
LOM Queries

- LOM queries are XML messages:
 - Created by clients
 - Sent for approval to the BS via an ELN Client
 - Multicasted by the BS to other clients with LOM repositories (federated search)
- Clients are responsible for creating and processing LOM Queries

LOM Query Processing



Query Model



```

    <xs:element ref="or"/>
    <xs:element ref="not"/>
  </xs:choice>
</xs:sequence>
</xs:complexType>
<xs:complexType name="NotType">
  <xs:choice>
    <xs:element ref="comp"/>
    <xs:element ref="and"/>
    <xs:element ref="or"/>
    <xs:element ref="not"/>
  </xs:choice>
</xs:complexType>
<xs:complexType name="FilterType">
  <xs:choice>
    <xs:element ref="comp"/>
    <xs:element ref="and"/>
    <xs:element ref="or"/>
    <xs:element ref="not"/>
  </xs:choice>
  <xs:attribute name="schemaVersion" type="xs:decimal"/>
</xs:complexType>
<!-- ===== -->
<!-- Simple Types definition -->
<!-- ===== -->
<xs:simpleType name="OpType">
  <xs:restriction base="xs:NMTOKEN">
    <xs:enumeration value="eq"/>
    <xs:enumeration value="ne"/>
    <xs:enumeration value="lt"/>
    <xs:enumeration value="gt"/>
    <xs:enumeration value="le"/>
    <xs:enumeration value="ge"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="FieldType">
  <xs:restriction base="xs:NMTOKEN"/>
</xs:simpleType>
<xs:simpleType name="ValueType">
  <xs:restriction base="xs:string"/>
</xs:simpleType>
</xs:schema>
  
```

LOM Query: User Interface

The screenshot displays the LOM Query User Interface, which is organized into three main stages:

- 1. Main choice ->** This stage offers several search criteria: Language, Rights, End User / Age of the students, Educational Informations, and File type. It also includes a section for **Predefined keywords** and a **Content of education** section.
- 2. Second choice** This stage allows users to filter by **File type**, with options for Video, Audio, Text, and Software.
- 3. Your selection** This final stage shows the **General Criteria** selected by the user, including Language : English REMOVE and Age : 10-15 REMOVE. A **SEARCH** button is provided to execute the query.

At the top of the interface, there are navigation links for Login, Help, Search, Publish, ELM, and Home. The 'Celebrate' logo is visible on the left, and the breadcrumb 'Introduction > Resources' is on the right. The text 'Easy Search' is centered at the bottom of the main content area. The footer contains links for About, Credits, Terms and Conditions, and Copyright 2003.

Filter Editor

Filter Window - Microsoft Internet Explorer

And

- Comparison
 - 1.3-Language
 - =
 - En
- And
 - Comparison
 - 1.1.1-Catalog
 - =
 - ISBN
 - Comparison
 - 1.1.2-Entry
 - =
 - 0-596-000317-X

Formula: (1.3-Language = En) And ((1.1.1-Catalog = ISBN) And (1.1.2-Entry = 0-596-000317-X))

OK Cancel

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<and xmlns="http://celebrate.eun.org/xml/ns/filter-0_1">
  <comp>
    <op>eq</op>
    <field>1.3-Language</field>
    <value>En</value>
  </comp>
  <and>
    <comp>
      <op>eq</op>
      <field>1.1.1-Catalog</field>
      <value>ISBN</value>
    </comp>
    <comp>
      <op>eq</op>
      <field>1.1.2-Entry</field>
      <value>0-596-000317-X</value>
    </comp>
  </and>
</and>
```

Checked LOM Queries

LOM Queries, User Rights, and Checked LOM Queries share the same XML schema (filter.xsd)

Checked LOM Query

= (User Rights) And (LOM Query)