

Open Digital Rights Management

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Outline

- Introduction to ODRL
- Distributed DRM
- Distributed Identity

Digital Rights Expression

- *Expression* – the description of the resource, ownership of the resource, and the terms and conditions of use
- *Authentication* – verification that the person using the resource has the right to use the resource
- *Protection* – means, such as encryption, to ensure only authorized users have access

Where DRM is Applied

- *Resource* – a particular document or digital resource – for example, a document may be locked or encrypted
- *Access Point* – a content server, such as a website – for example, a website may require a login
- *Network* – the connections between servers – for example, ATM network

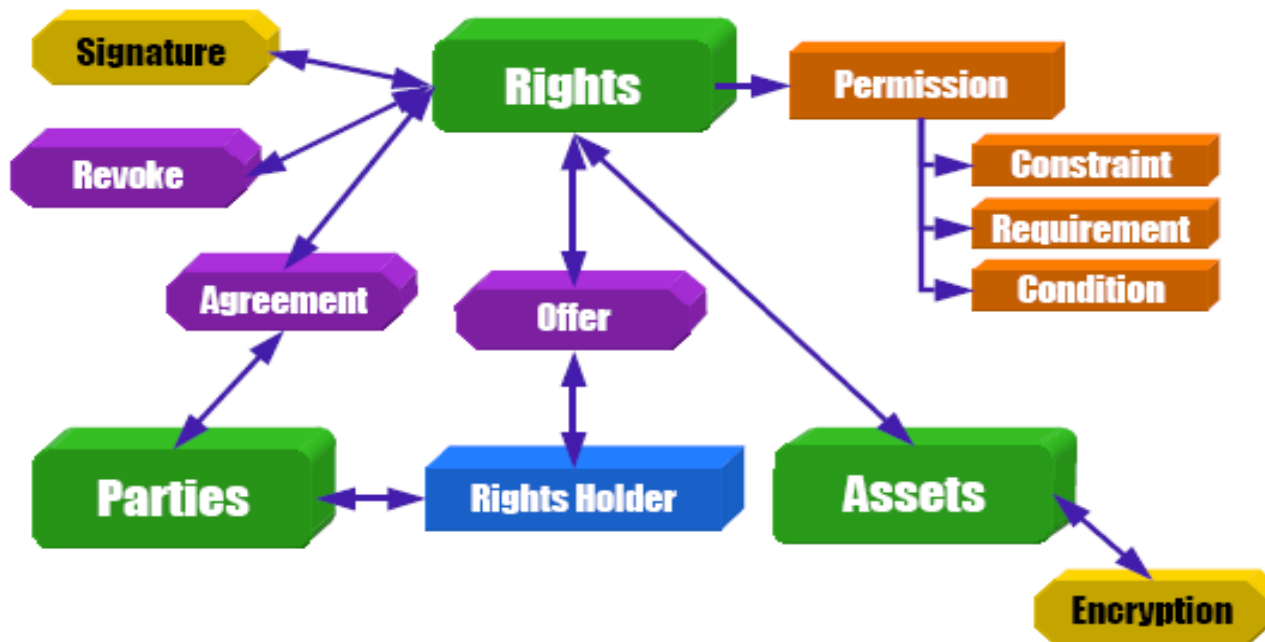
DRM Design Metric

	Resource	Access	Network
Expression	Copyright notice	Terms of use notice	Rights expression language
Authentication	Password to open document	Password to access website	PIN to use ATM system
Protection	Encrypted document	Secure sockets layer	Virtual private network (VPN)

Defined at the Network Level

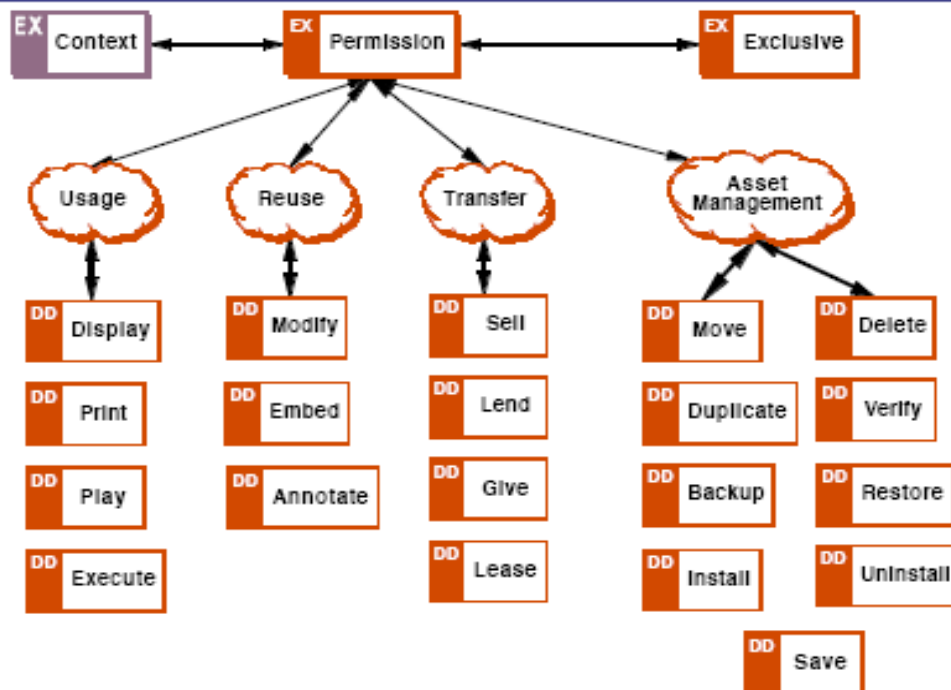
- A rights expression language (REL) is used
 - Current support for ODRL because it does not create a cost
 - XrML, DRML are options if they are royalty free
- A mechanism for expressing digital rights expression is supported such that these are available anywhere in the network

ODRL Model

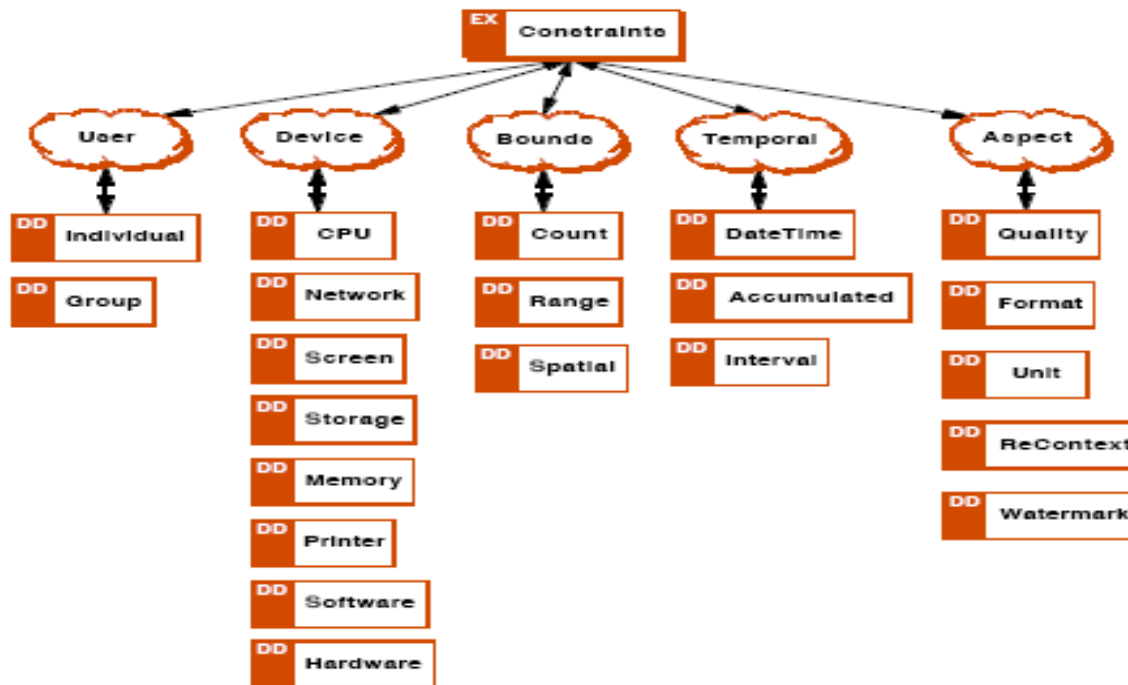


http://www.bakercyberlawcentre.org/2002/DRMS_Papers/DRMS-Sym-RI-Mar2002.pdf

ODRL Permission Terms



ODRL Constraint Terms



ODRL - XML Example

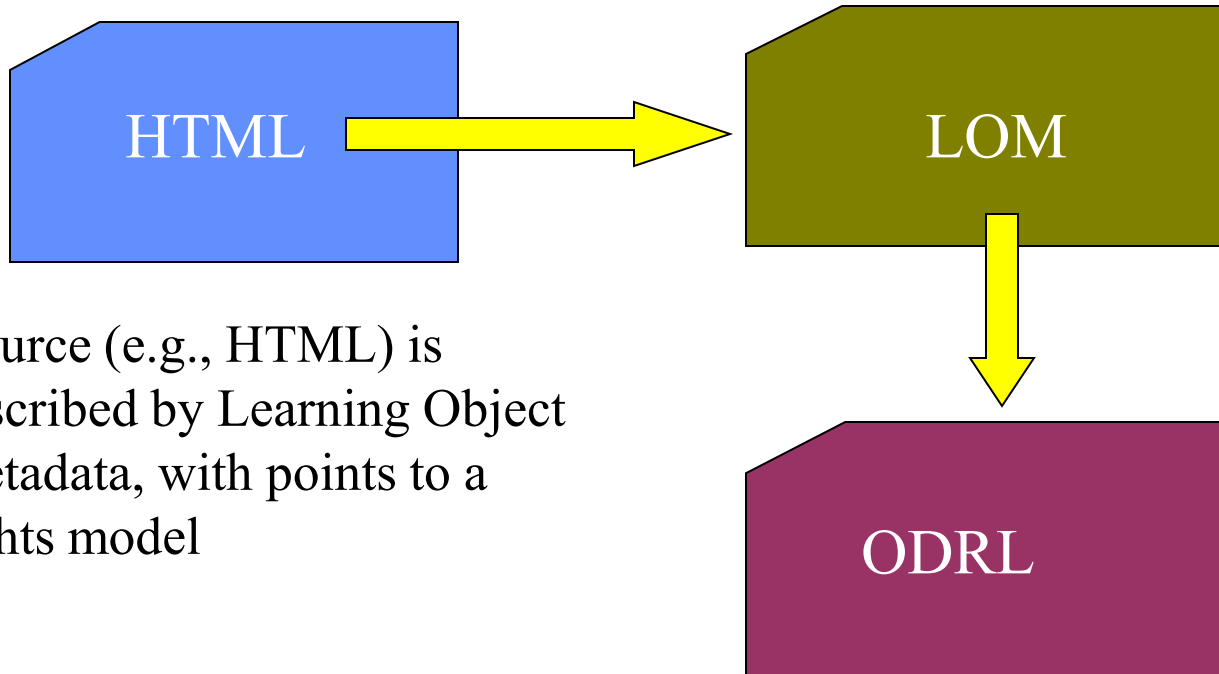


```
<offer>
  <asset> <context>
    <uid idscheme="DOI">10.999/EB/324.444.3211</uid>
  </context>
</asset>
<permission>
  <display/>
  <print/>
  <constraint> <cpu/> </constraint>
  <requirement>
    <prepay> <payment>
      <amount currency="AUD">10.00</amount> </payment>
    </prepay>
  </requirement>
</permission>
</offer>
```

EduSource DRM Criteria

- *Open Standards* – the mechanisms for expression, authentication and protection can be used by anyone
- *Open Network* – any agency or entity may provide any of the services provided by the network
- *Open Marketplace* – any agency or entity may buy or sell on the network

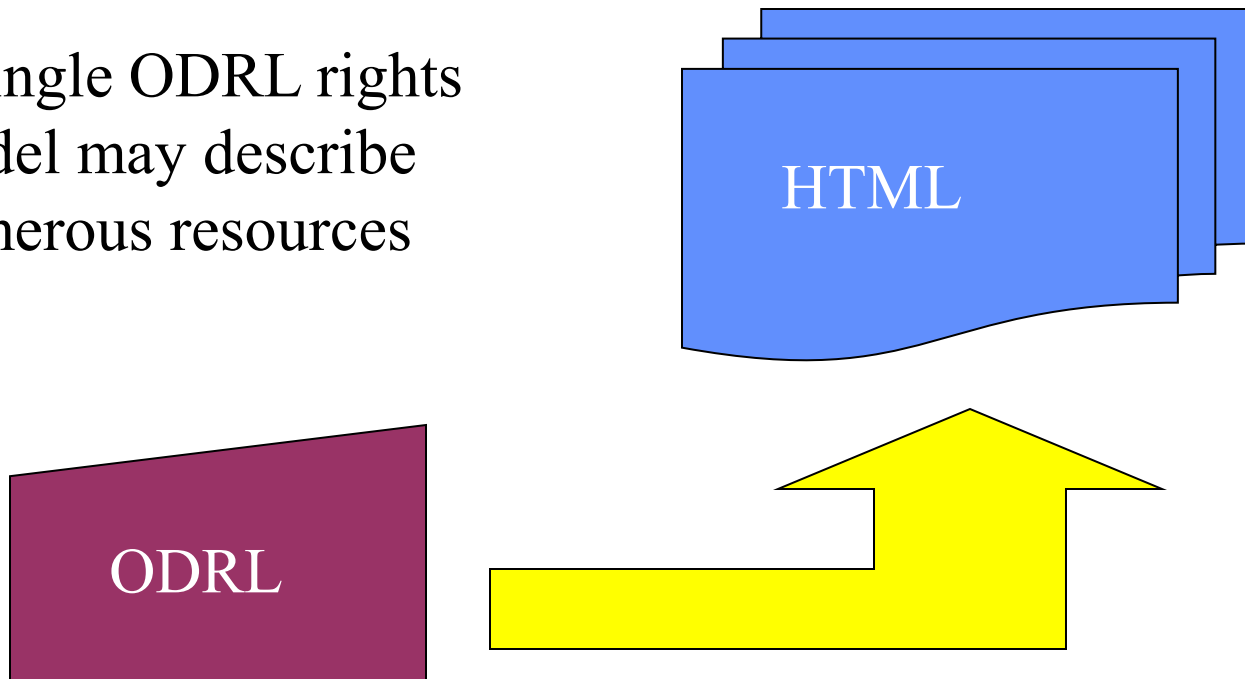
eduSource Rights Model (1)



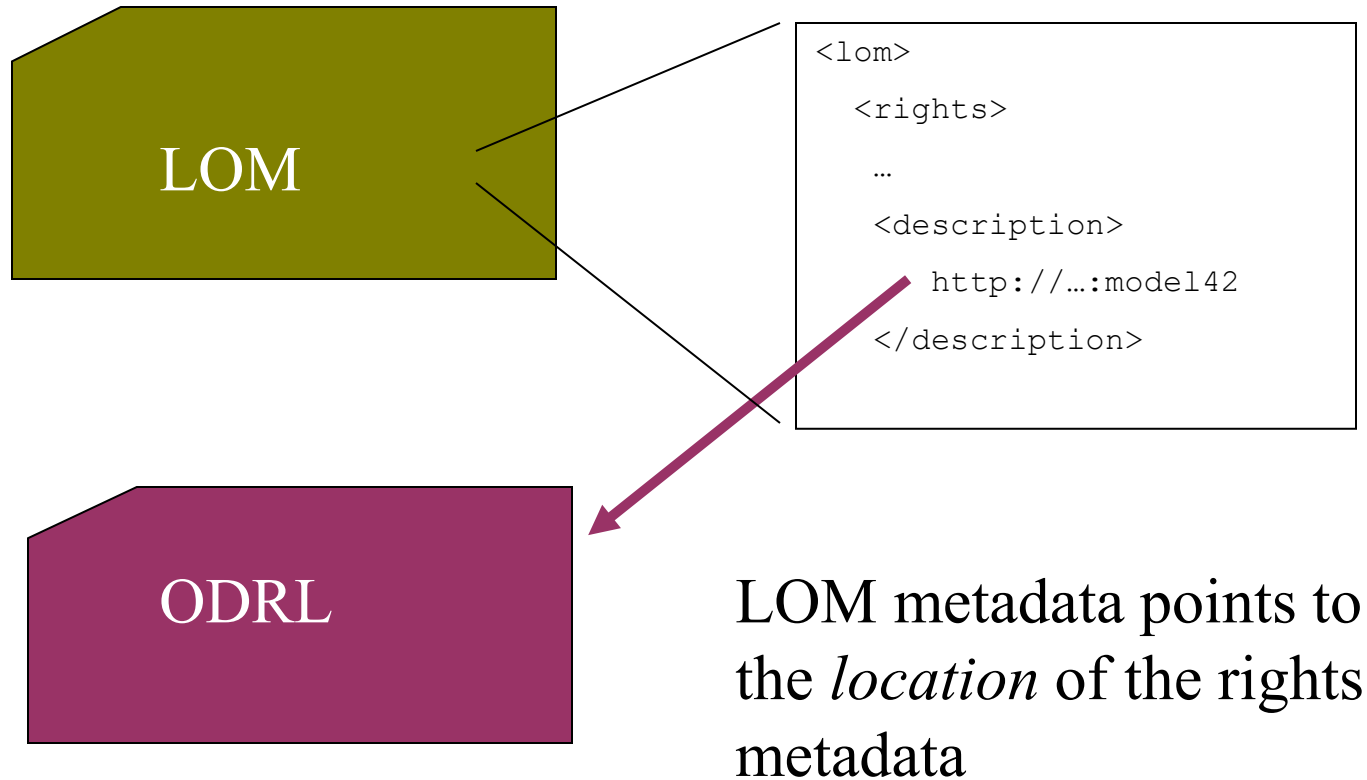
A resource (e.g., HTML) is described by Learning Object Metadata, with points to a rights model

eduSource Rights Model (2)

A single ODRL rights model may describe numerous resources



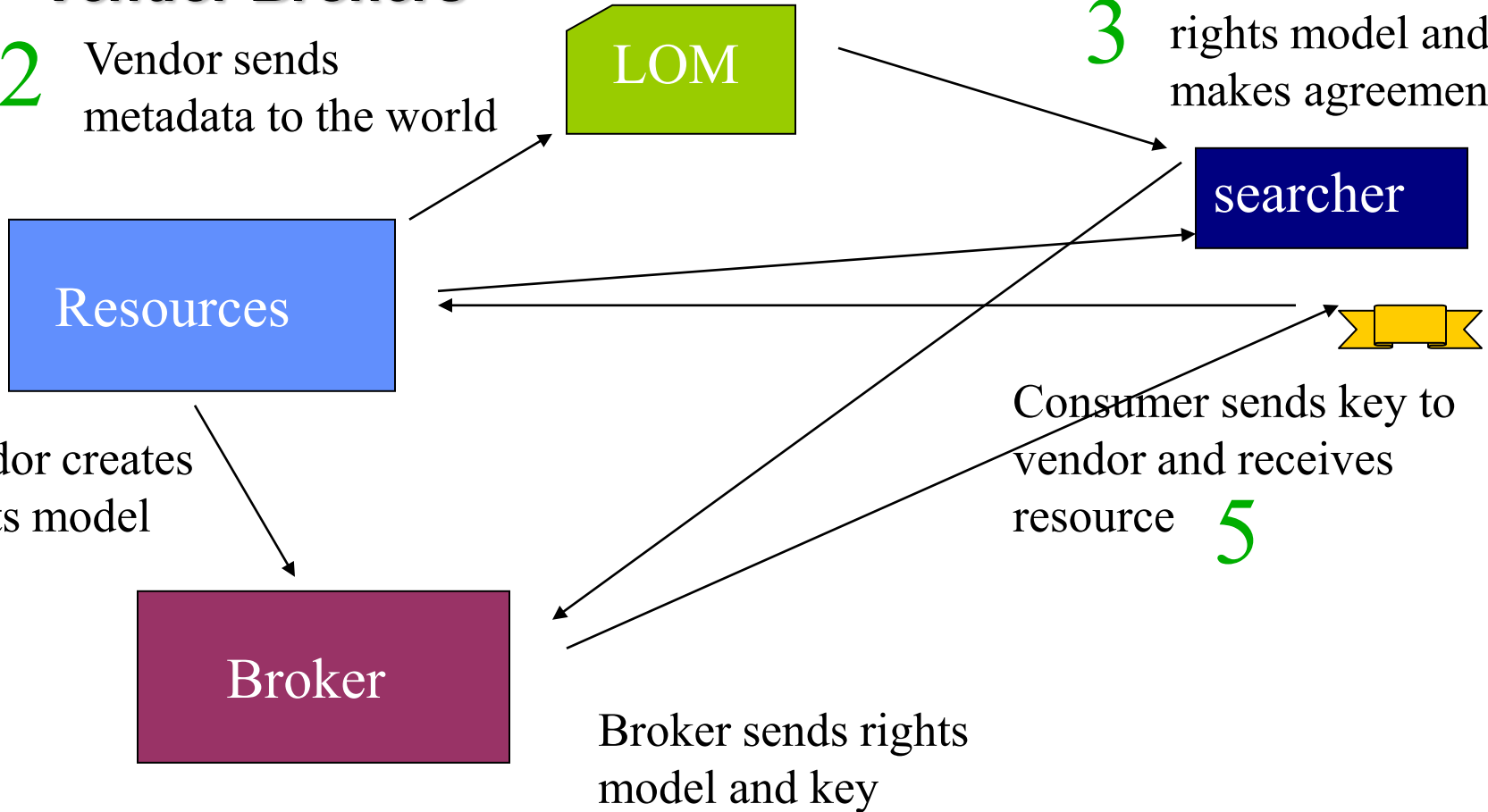
eduSource Rights Model (3)



Vendor Brokers

2 Vendor sends metadata to the world

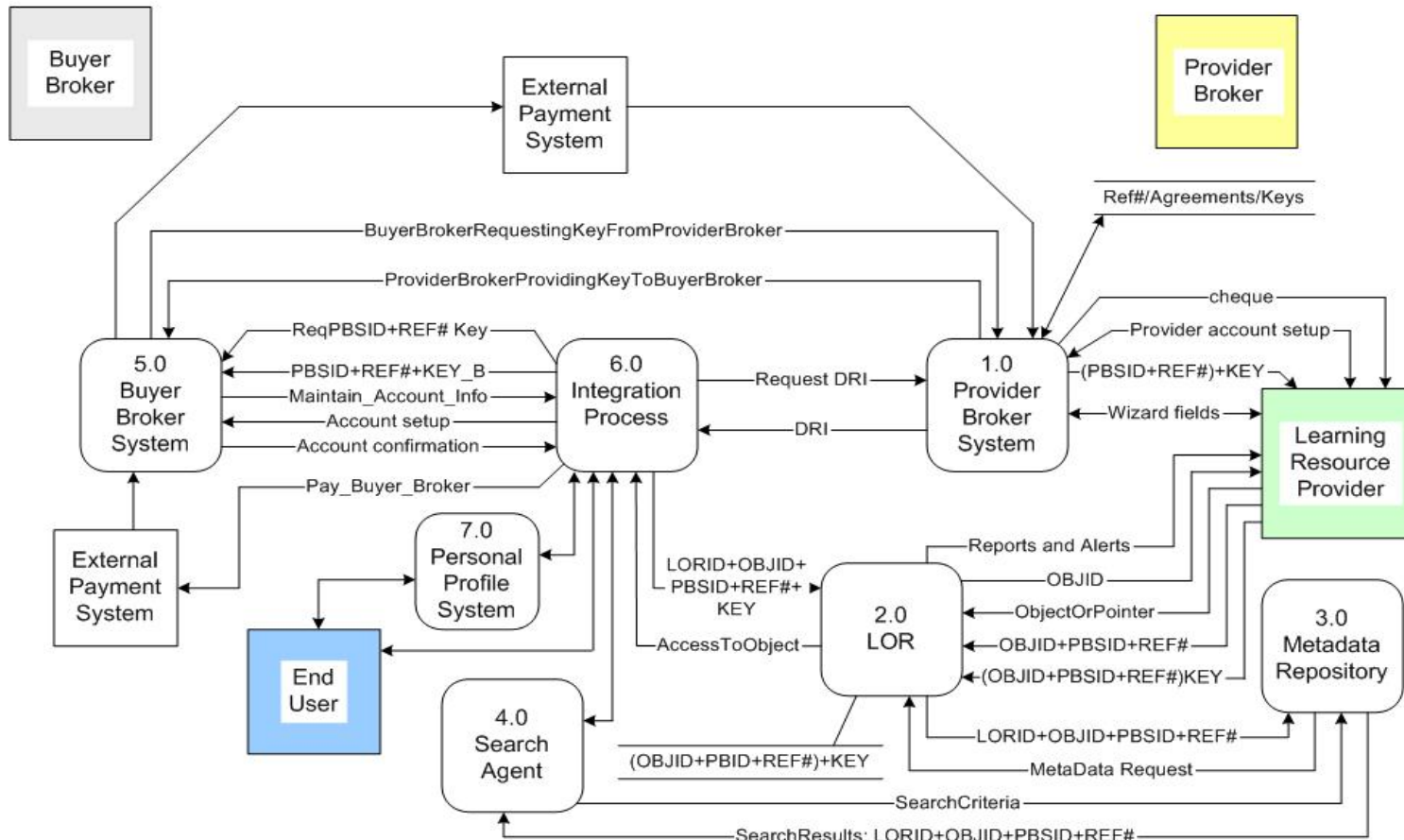
3 Consumer asks for rights model and makes agreements



4


Digital Rights Management System

June 4th 2003



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Key should not flow to metadata repository



eduSource Digital Rights Enabled Object Browser
stephen(3)

[Home](#) [Your Objects](#) [Search Objects](#) [Update Personal Profile](#) [Purchaser Broker Accounts](#) [Logout](#)

stephen:3

Search on Object Repositories

Search Agent:

Purchaser Broker:

Search String:

PurchaserBroker1
 PurchaserBroker2
 PurchaserBroker3

Filter On:

Category:

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eduSource Digital Rights Purchaser Broker System

[Home](#) [Manage Account](#) [Credit Card Info](#) [Preferred Payment Method](#) [View History](#) [Logout](#)

The following information will be kept confidential.

First Name:

Last Name:

Address:

Email:

Password:

Conditions

Pre-authorize individuals purchases up to:

Amount purchased to date: null

Maximum for all purchases:



eduSource LOM Tagger

Rights

Cost:	<input type="text"/>
Copyright and Other Restrictions	<input type="text"/>
Description	Free Giveaway ▾
Select ODRL F or Create New OD	<ul style="list-style-type: none"> Free Giveaway Demo 10 Views Ten Dollar Special Full Reuse CC Attribute Share Alike

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Attribution-NoDerivs-NonCommercial

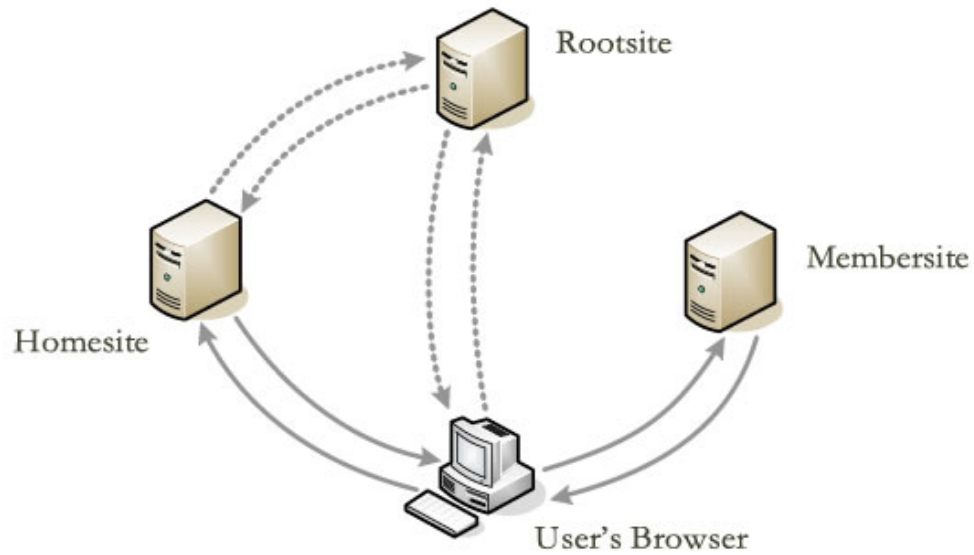
Attribution-NonCommercial

Total XML for all pages

Generate ODRL for all pages

```
<?xml version="1.0" encoding="UTF-8"?>
<o-ex:rights xmlns:o-ex="http://odrl.net/1.1/ODRL-EX"
             xmlns:o-dd="http://odrl.net/1.1/ODRL-DD">
  <o-ex:offer>
    <o-ex:permission>
      <o-ex:requirement>
        <o-dd:attribution/>
      </o-ex:requirement>
    <o-dd:display/>
    <o-dd:play/>
    <o-dd:print/>
  </o-ex:offer>
</o-ex:rights>
```


Open Identification - SxIP



<http://sxip.org>