

# Resource Profiles Markup Language



**Stephen Downes  
and Luc Belliveau**  
Atlantic Workshop  
on Semantics and  
Services  
**Fredericton, NB,  
June 14, 2010**

# Overview

- Resource Profiles
  - Distributed Metadata
  - Three Types of Metadata
    - Educational Metadata
    - Using Resource Profiles
- Resource Profiles Markup Language
  - RPML Tool Demo
  - RPML Syntax Overview
  - RPML Application Detail

# Distributed Metadata

- One Document, One Record?
- Distributed Metadata:
  - Multiple Metadata Formats
  - Multiple Authorship
  - Multiple Locations

# Three Types of Metadata

- First Party Metadata
  - Bibliographic, technical, rights
- Second Party Metadata
  - Page rank, usage metadata, server logs, context
- Third Party Metadata
  - Classification, ratings, educational

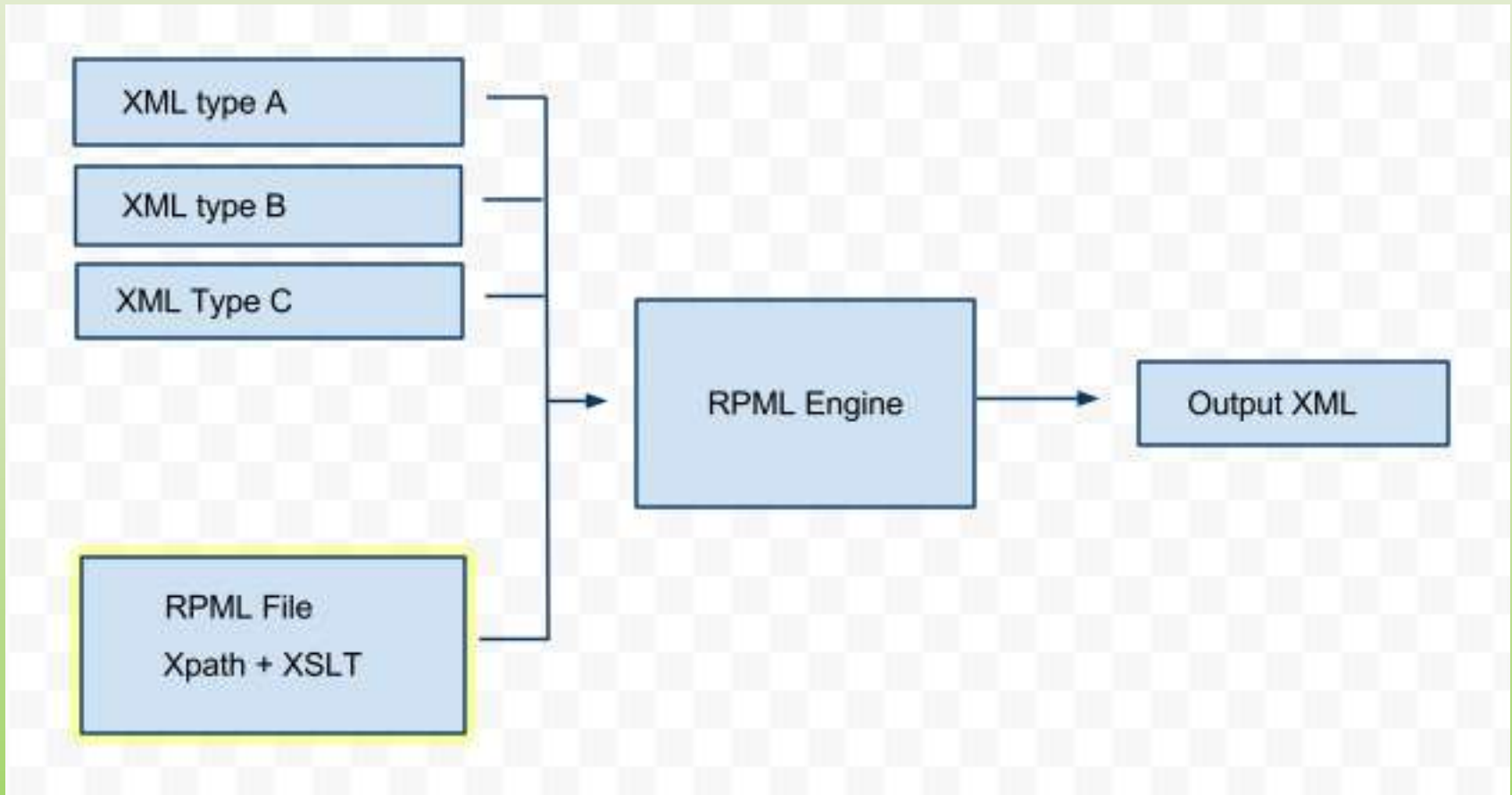
# Educational Metadata

- Educational Standards Metadata
  - Matches a resource to an educational standard
  - Curriculum, course description, competencies
- Educational Properties Metadata
  - interactivity type, learning resource type, interactivity level, semantic density
- Educational Use Metadata
  - Relation, sequencing, learning design

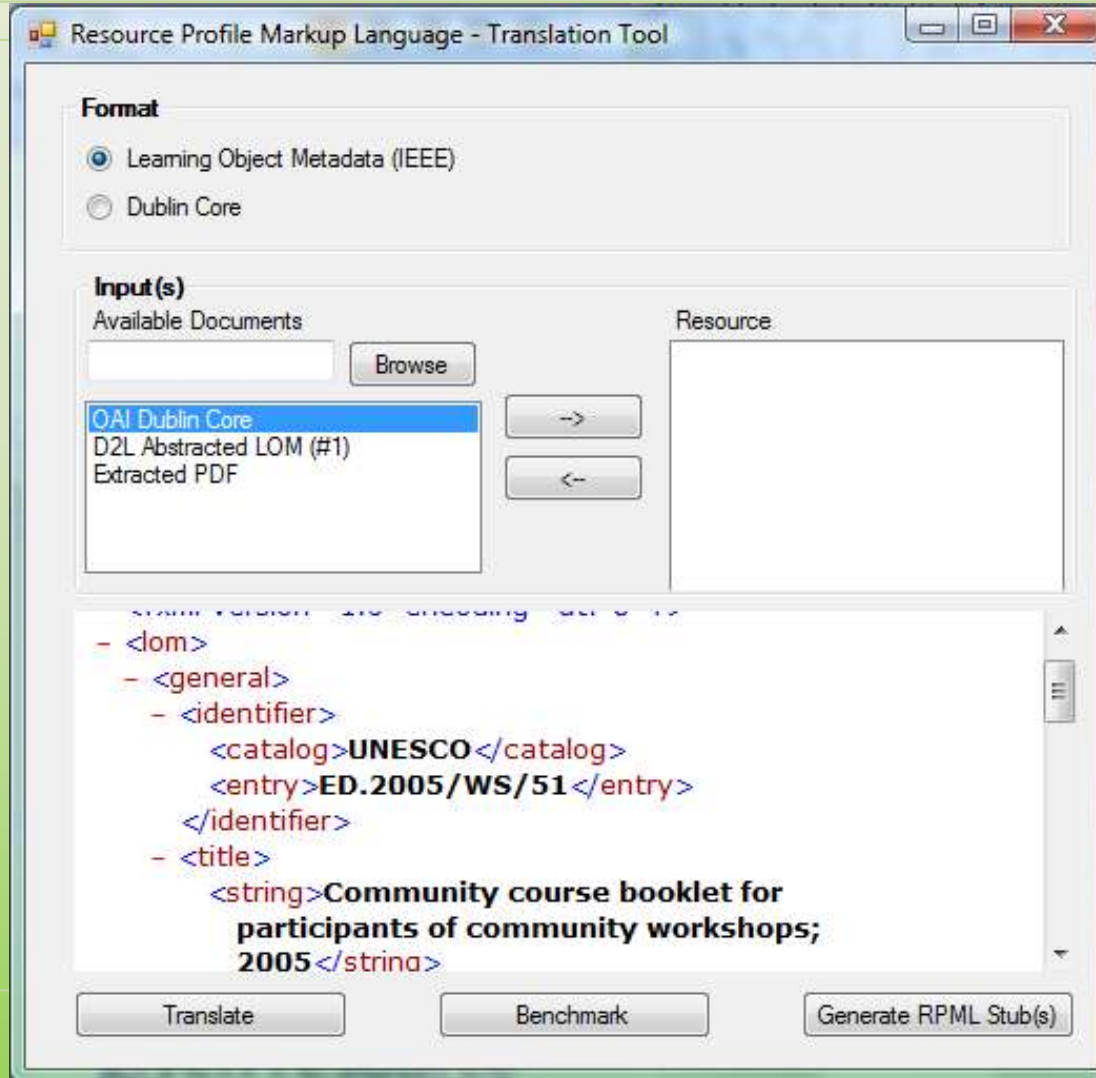
# Using Resource Profiles

- Static vs Evolving Resource Description
- Tailoring of Profile to Specific Needs
- Resource Metadata Lifecycle
- The RPML engine selects elements from different files and combines them to form new, and possibly unique, descriptions of a given resource

# RPML Engine Demo



# RPML Engine Demo





# RPML Syntax Overview

## Getting Results

```
<directive>
```

```
  <ruleset>
```

```
    <rule test="/dc/title">
```

```
      <add-result name="title" select="/dc/title" />
```

```
    </rule>
```

```
    <rule test="/lom/general/title">
```

```
      <add-result name="title" select="/lom/general/title" />
```

```
    </rule>
```

```
  </ruleset>
```

# RPML Syntax Overview 2

## Using Results

```
<evaluate>
```

```
  <true>
```

```
    <for-each result="title" select="node()">
```

```
      <element name="title">
```

```
        <value-of select="text()" />
```

```
      </element>
```

```
    </for-each>
```

```
  </true>
```

```
  <false> <!-- none of the rules matched --!></false>
```

```
</evaluate>
```

```
</directive>
```

# RPML App Flow XML

## Inputs Xpath

```
- <inputs>
-   <document>
      <text>Extracted PDF</text>
      <uri>file:///{$appPath}/examples/inputPdfExtracted.xml</uri>
    </document>
-   <document>
      <text>OAI Dublin Core</text>
      <uri>file:///{$appPath}/examples/inputOaiDc.xml</uri>
    </document>
</inputs>
</rpmTool>
```

# RPML App Flow XML 2

## Outputs XSLT

```
- <outputs>
```

```
- <document>
```

```
  <text>Learning Object Metadata (IEEE)</text>
```

```
  <uri>file:///{$appPath}/examples/outputLom.xml</uri>  
>
```

```
</document>
```

```
- <document>
```

```
  <text>Dublin Core</text>
```

```
  <uri>file:///{$appPath}/examples/outputDc.xml</uri>
```

```
</document>
```

```
</outputs>
```

# RPML XSLT

Rule – Relation Construction of Output File

```
<rpml:first-resource match="rule">  
  <rpml:rule test="/oai_dc:dc/dc:relation">  
    <rpml:set-value mode="relation"  
      select="/oai_dc:dc/dc:relation" />  
  </rpml:rule>  
  <rpml:element name="relation">  
    <rpml:get-value mode="relation" select="text()" />  
  </rpml:element>  
</rpml:first-resource>
```

# RPML PHP1

```
// Include OAI DC Metadata, a yes/no value and PdfExtract metadata.
```

```
$resources = array(  
    pathinfo('file:///'. $_SERVER['SCRIPT_FILENAME'],  
        PATHINFO_DIRNAME) . '/data/lvS7/md_1',  
    pathinfo('file:///'. $_SERVER['SCRIPT_FILENAME'],  
        PATHINFO_DIRNAME) . '/data/lvS7/md_2',  
    pathinfo('file:///'. $_SERVER['SCRIPT_FILENAME'],  
        PATHINFO_DIRNAME) . '/data/lvS7/md_3'  
);
```

```
// Instantiate the RPML processor
```

```
$rpml = new rpml($resources);
```

```
// Output resulting XML file.
```

```
echo $rpml->getOutput();
```

# RPML PHP2

```
$selectedDoc = new DOMDocument();  
$xslDoc = new DOMDocument();  
$xsl = new XSLTProcessor();  
$selectedDoc->load(pathinfo.../profile/example.xml');  
$xslDoc->load(pathinfo... ./inc/rpml.xsl');
```

```
    $xsl->importStylesheet($xslDoc);  
    $resources = implode(',', $this->resources);  
    $xsl->setParameter('', 'resources', $resources);  
    $data = '';  
    $data = $xsl->transformToXml($selectedDoc);
```

# Thanks!

Stephen Downes

[stephen@downes.ca](mailto:stephen@downes.ca)

Luc Belliveau

[Luc.Belliveau@nrc-cnrc.gc.ca](mailto:Luc.Belliveau@nrc-cnrc.gc.ca)