

# Achievement Standards Network: Adoption by IMS Standards

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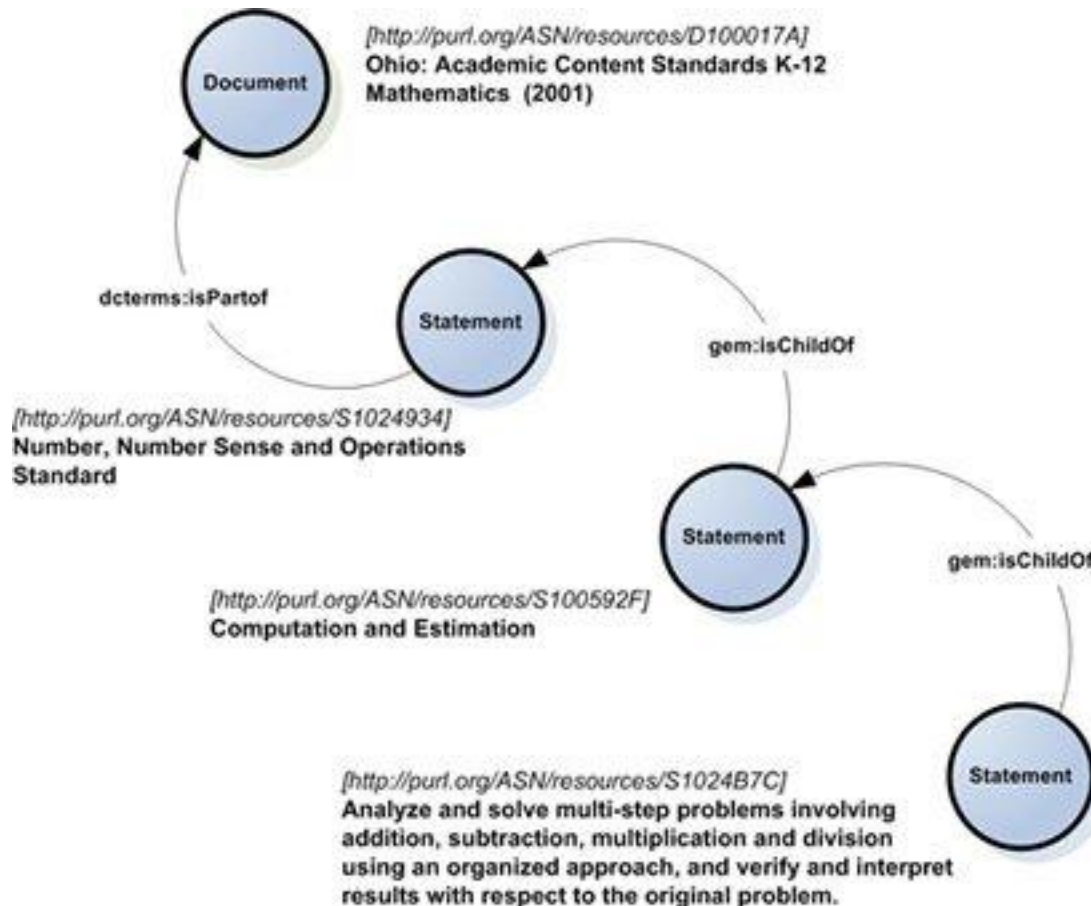
# Talk Objectives

- Explain the significance of learning standards and content interoperability
- Introduce the ASN Framework
- Explain how IMS currently uses ASN

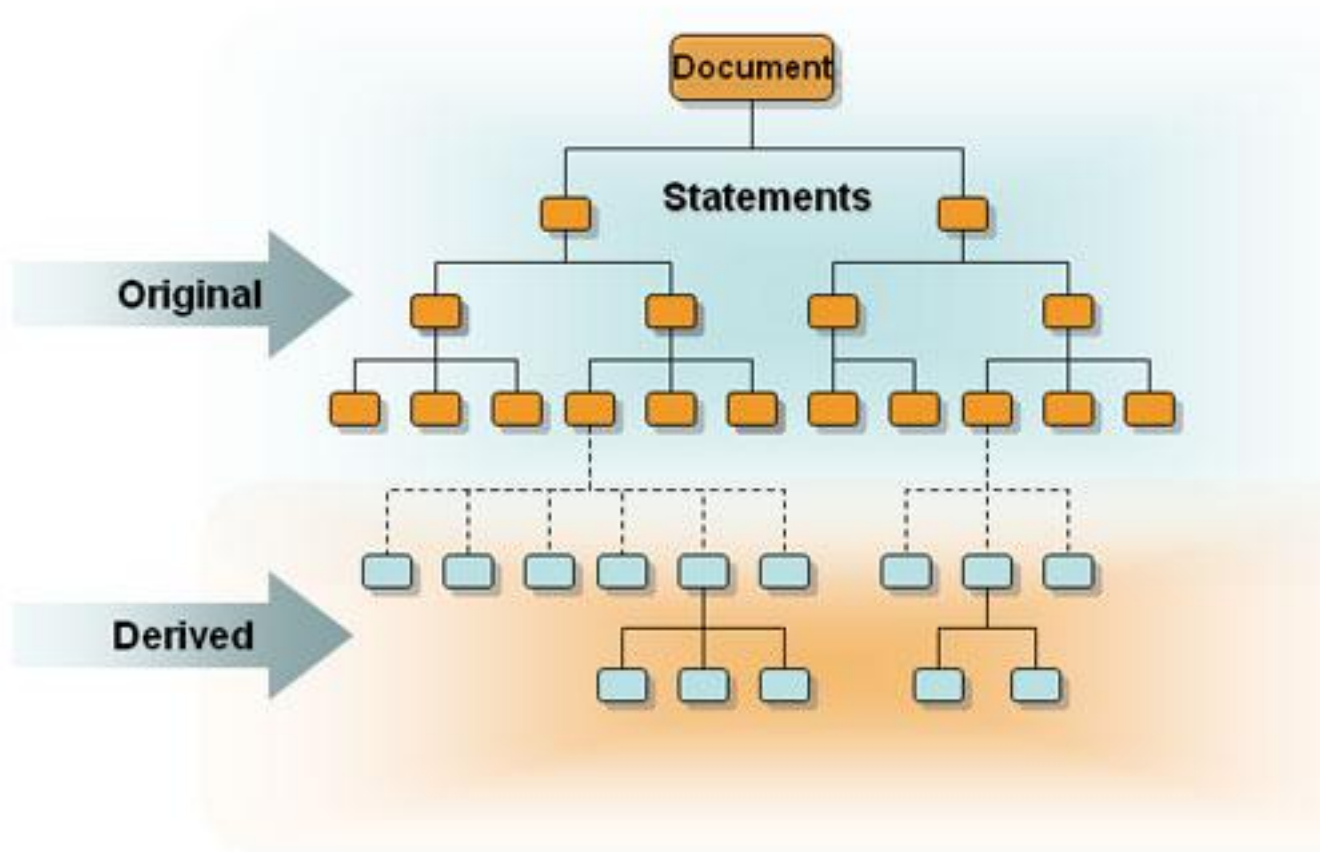
# Learning Objectives and Standards

- Annotation of learning content with learning standards identifies competencies being addressed by the content
- Need to be able to describe learning standards, objectives and competencies in **machine readable form**
- Broad and ease of adoption for linking the content with the corresponding learning standards requires open interoperability standards

# Semantic Linking for Learning Standards

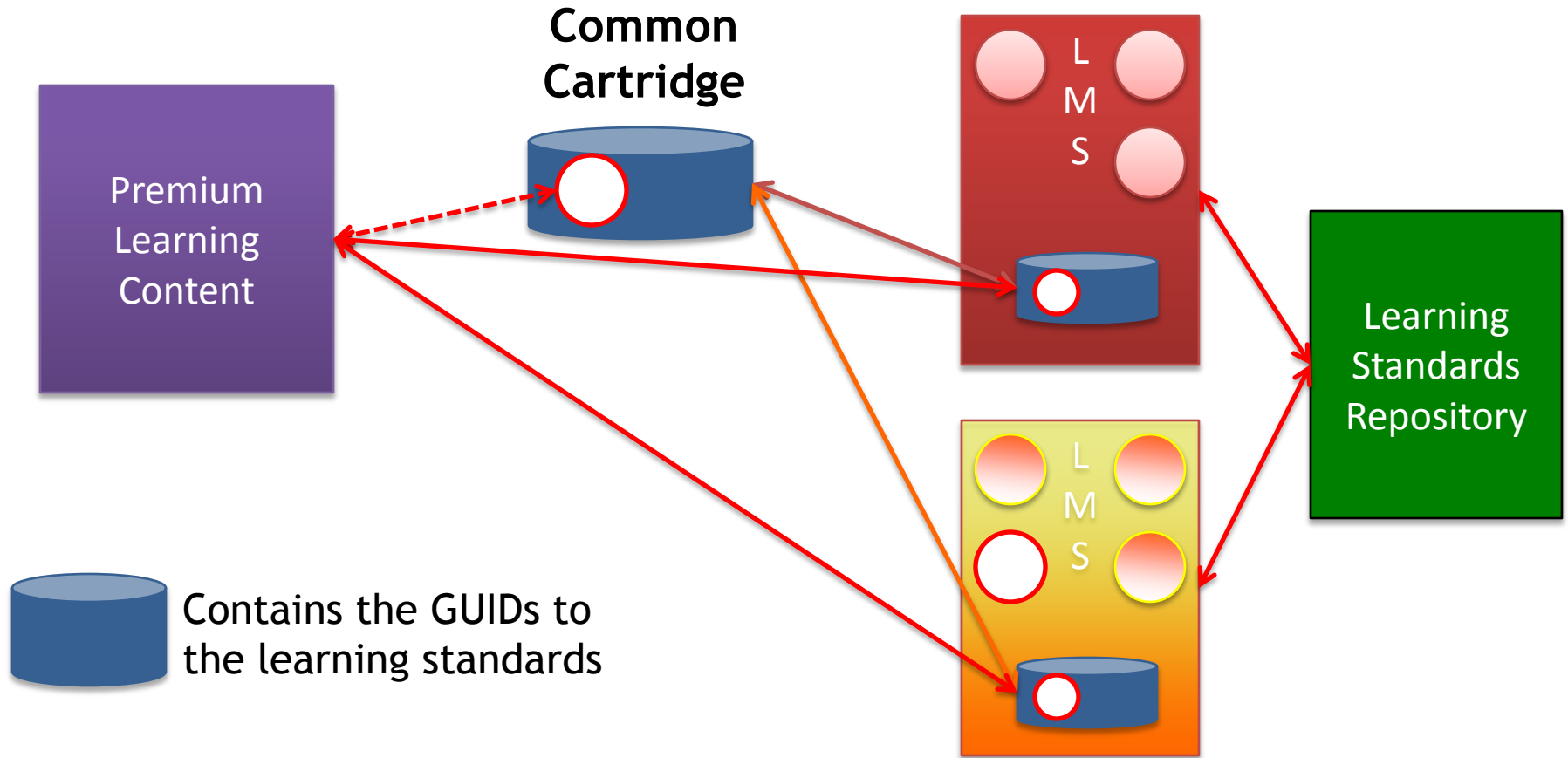


# Derived Relationships





# An Architecture



# Achievement Standards Network

- The Achievement Standards Network is an open access service to competency framework data
- Developed by Professor Stuart Sutton at the University of Washington, in collaboration with JES & Co.
- Funded through NSF awards DUE-0121717 and DUE-0840740 plus support from the Gates Foundation, and licensed to JES & Co. under agreement with University of Washington.
- As of February 2014, the ASN is owned and operated by Desire2learn (D2L)

# ASN Framework

- Hosts learning standard definitions
- Supports the encoding of new learning standards
- Provides ASN Toolkit
  - Searching, Cross-walks, URI Resolver
- Provides user documentation and community support
- Hosted by D2L



# Curriculum Standards Metadata (CSM)

- IMS metadata to enable learning content to be annotated by **links** to the associated learning standards (**not limited to ASN**)
- Can be used in any XML-based/savvy instance e.g. IEEE LOM
- IMS use CSM in the context of a Content Package (CP) or and Common Cartridge (CC)

# CSM/ASN Example

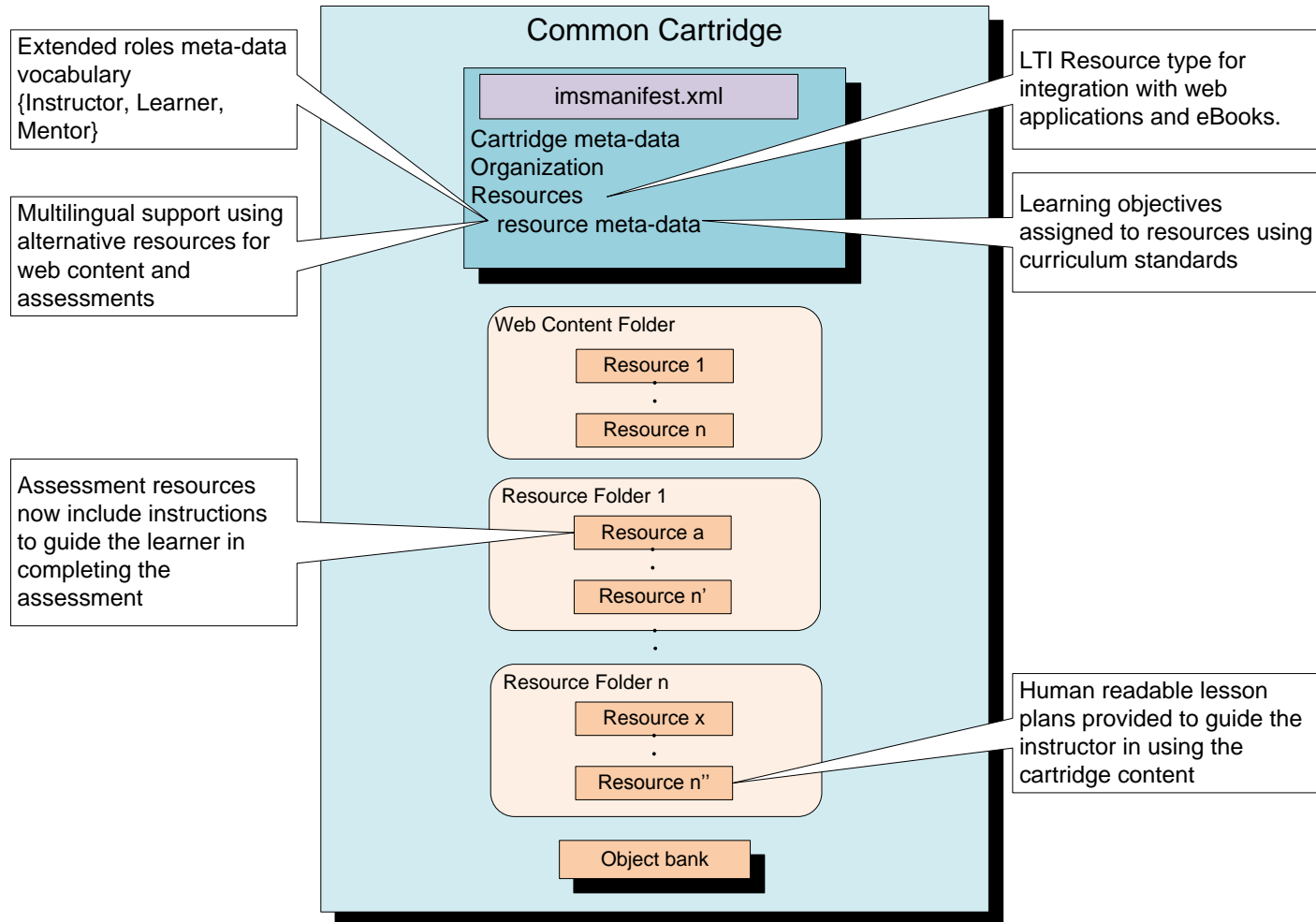
```
<curriculumStandardsMetadataSet resourceLabel="QTI-Item" resourcePartId="ITEM-001">
  <curriculumStandardsMetadata providerId="ASN">
    <setOfGUIDs region="Texas" version="1.0">
      <labelledGUID>
        <label>ASN PURL for Texas on subject "... " and level "..".</label>
        <GUID>http://purl_org/ims/cck12ls/usa_texas_LA_4_2_1_6</GUID>
      </labelledGUID>
      ...
    </setOfGUIDs>
    ...
  </curriculumStandardsMetadata>
  ...
</curriculumStandardsMetadataSet>
```

# What is Common Cartridge?

- Common Cartridge (CC) is a specification for packaging and exchanging learning and assessment content
- The CC package distills the latest and best community practices for sharing digital content among authoring tools and learning platforms
- Supports both the containment of content in the package external references using URLs or LTI
- CCv1.3 and Thin CC are the latest versions



# A Common Cartridge



# Metadata Everywhere

- Within the manifest:
  - Manifest-level
  - Organization-level
  - Item-level
  - Resource-level
  - File-level
- Binding forms:
  - IEEE 1484.12.1-2002: LOM
  - IMS Metadata v1.3.2 (Binding)
  - **IMS Curriculum Standards Metadata v1.0**
    - Manifest-level
    - Resource-level

# CC/CSM/ASN Example

```
<manifest>
  <metadata>
    <csm:curriculumStandardsMetadataSet>
    </csm:curriculumStandardsMetadataSet>
  </metadata>
  ...
  <resources>
    <resource identifier="I_00007_R" type="idpfepub_epubv3p0">
      <metadata>
        <csm:curriculumStandardsMetadataSet>
        </csm:curriculumStandardsMetadataSet>
      </metadata>
      <file href="I_00007_R/moby-dick-mo-20120206.epub"/>
    </resource>
  </resources>
</manifest>
```

# Summary

- ASN is a well established learning standards repository
- IMS supports the use of ASN via the IMS Curriculum Standards Metadata (CSM) interoperability standard
- CSM is currently used in the IMS Common Cartridge and APIP standards