



IMS GLOBAL[®]
Learning Consortium

Update on IMS Global Learning Consortium standardisation activities

EdReNe Seminar
Athens, April 2017

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@LearningImpact



IMS GLOBAL[®]
Learning Consortium

IMS Global



- **Non-profit, member-based** collaborative with a mission to improve the learning experience for students, teachers and administrators
- Members include institutions (K-12 & HED), corporate learning, publishers, and EdTech product developers and suppliers
- **Learning Impact** focused: primary focus is *educational improvement*; technology and interoperability are to provide a scalable foundation for better education

- IMS in practice: a **forum** for enabling leading educational institutions and product suppliers to **work together**, leading the sector forward in terms of innovation and impact.
 - Technical Working Groups
 - Technical Advisory Board
 - Executive boards
 - Communities of Practice

Towards an interoperable ecosystem: modus operandi

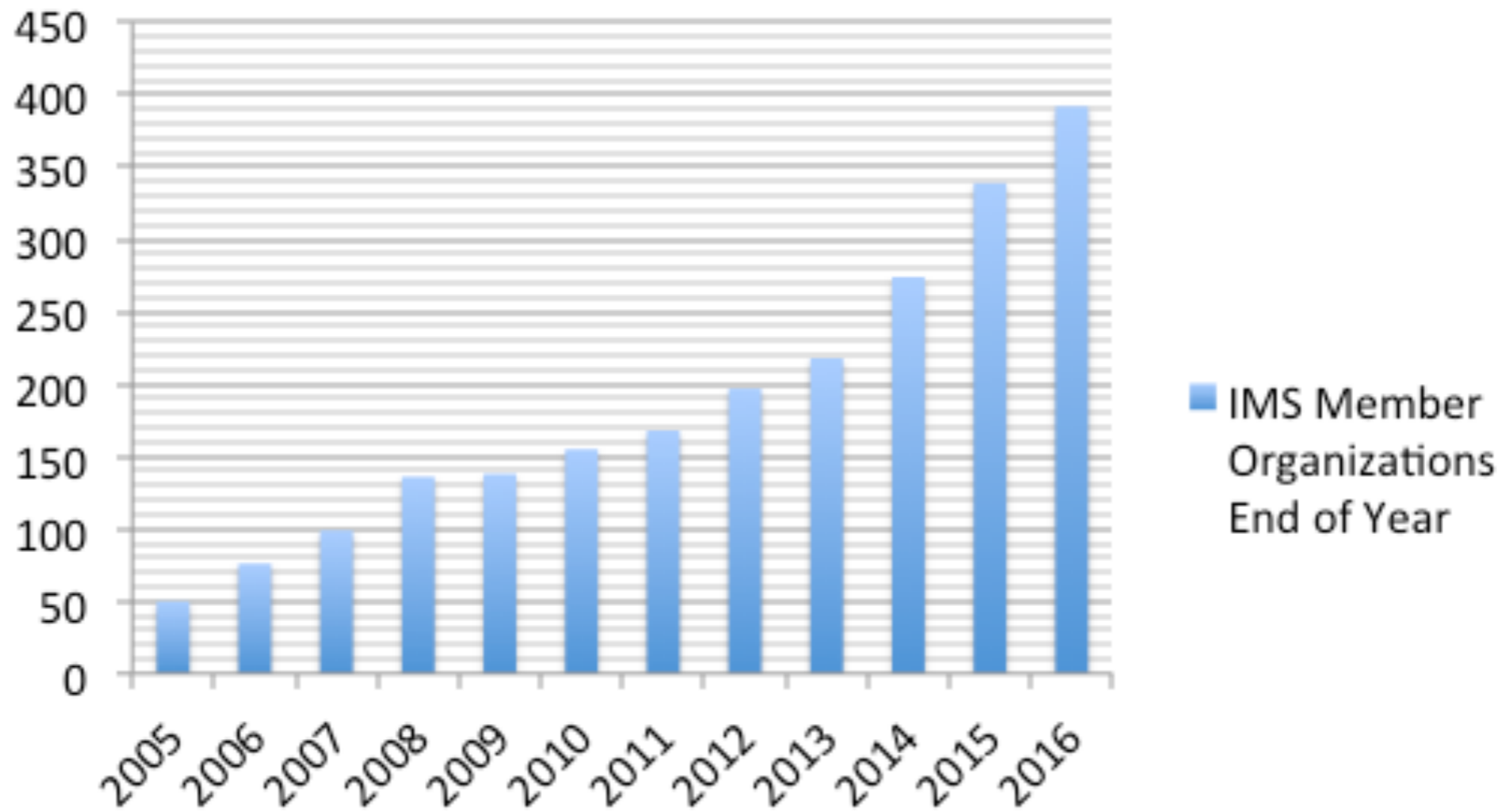
- Technical Specifications
- Best Practices & Guidelines
- Sample Code & Libraries
- Member Discussion Forums & Website
- Partnerships
- Certification & Product Directory






















IMS = World Class EdTech Ecosystem

- **Well-resourced:** *Large enough to deliver on the value proposition of open standards:* 15 full-time staff, \$4 million annual revenue, 20% CAGR over 10 years. Approaching the size and stature of the World Wide Web Consortium.
- **Game Changing Adoption:** 700+ product certifications
- **Sustainable support:** across HED (ubiquitous) and K-12 (growing fast) institutions & suppliers: supported through membership dues and member contributions
- **Partners with leading organizations:** EDUCAUSE, Internet2, Unizin, Bill & Melinda Gates Foundation, ISTE, Learning Counsel, Ed-Fi, CoSN, SETDA, K12 Federation, WCET, Online Learning Consortium, AACRAO, Quality Matters, Mozilla Foundation, Collective Shift (MacArthur Foundation), IDPF, ISO/IEC, PARCC, SBAC
- **Learning Impact focused:** Primary focus is educational improvement; technology and interoperability are to provide a scalable foundation for better education




















IMS Global Learning Consortium Growth



	Blackboard					
	<p>Three Membership Levels:</p> <ul style="list-style-type: none"> • Contributing Member = Voting Member; Leader of the Movement • Affiliate Member = Development network member across all IMS work • Alliance Member = Development network member for a limited set of IMS work <p>see http://www.imsglobal.org/imsmembership.html</p>					
						
						
						
						

See All Members here:

<http://www.imsglobal.org/membersandaffiliates.html>

	Blackboard					
	Engagement:					
	<ul style="list-style-type: none"> • Technical Advisory Board (Contributing Members) • Executive Steering Groups (Contributing Members) • Workgroups (Contributing Members) • Member web site: Specific areas for Contributing, Affiliate and Alliance Members • Face-to-face quarterly meetings in U.S. • Regional meetings in active regions outside U.S. • Community Communications 					
						

See technical activities here: <http://www.imsglobal.org/developers>

Upcoming IMS Global Meetings

Register now at
imglobal.org/lili2017



IMS Quarterly Meeting & Technical Congress: 14-17 August 2017
• Ann Arbor, Michigan

IMS Quarterly Meeting & Analytics Summit: TBD November 2017

IMS Quarterly Meeting & Digital Credentials Summit: TBD February 2018

IMS Europe

A European Perspective

- **IMS Europe** currently in formation
 - Alongside IMS South Korea, IMS Japan
 - Executive Board forming
 - Annual summit on European soil
 - Topic specific workshops as well (e.g. Open Badges)

IMS Europe: goals












- Represent European IMS members within IMS
- Create more awareness for the IMS standards in Europe
- Align specifications & implementations with European requirements & use cases
- Foster information sharing with European institutions & vendor communities
- Help European product suppliers reach larger markets

Technical Work Overview



Read more at: <http://www.msglobal.org/institutions.html>



	Technical Work	Technical Focus
	Accessibility	Accessibility, inclusive design, and personalization of online learning resources to meet the needs of all users/learners
	App Sharing & Integration Protocol	Peer-to-peer educational app sharing catalogs and storefronts
	Caliper Analytics	Consistently capturing and presenting measures of learning activity and defining a common language for labeling learning data, with a standard way of measuring learning activities and effectiveness enabling designers and providers of curriculum to measure, compare and improve quality
	Common Cartridge	Organization, publishing, distribution, delivery, and search of a wide variety of collections of digital learning content, applications used as the basis for or in support of online learning of any type.
	Digital Credentialing	Development of "eT," an extended transcript designed to support competency-based programs and creation of digital credentials
	EDUPUB	Establishing a globally interoperable, accessible, open ecosystem for e-Textbooks and other Digital Learning Materials via EPUB3, Educational Sector Standards and the Open Web Platform
	Learning Tools Interoperability	Integrating rich learning applications (often remotely hosted and provided through third-party services) with platforms like learning management systems, portals, learning object repositories, or other educational environments.
	OneRoster and Learning Information Services	Exchange and synchronization of roster information and grades which focuses on people, memberships, courses and outcomes.
	OpenVideo	Creation of video capture metadata to enable information from any video to be shared and searched
	Privacy and Security	Development of a Privacy Service which will carry privacy preferences across systems and tools
	Question and Test Interoperability/Accessible Portable Item Protocol	Exchange of item, test and results data between authoring tools, item banks, test construction tools, learning systems and assessment delivery systems, including accessible assessments.

IMS Technical Activities

see <http://www.imsglobal.org/developers>

IMS Standards 101

- **Learning Tools Interoperability (LTI)** - Establishes a more efficient/effective way of integrating rich learning applications with platforms like learning management systems, portals, or other educational environments.
- **Common Cartridge (CC) / Thin CC / EDUPUB** - Provides a way to represent digital course or e-book materials, including assessments and discussion forums, for use in online learning systems or e-book readers. Content can be developed & exported in one format and then used across a wide variety of learning systems.
- **Question and Test Interoperability (QTI)**- Enables interoperability of assessment items, tests and assessment results, including support for accessible digital assessments.
- **OneRoster & Learning Information Services (LIS)** - Enables interoperability between teaching and learning applications and student information systems; allowing student data, class data and outcomes to move seamlessly between systems.
- **Caliper Analytics (Caliper Framework & Sensor API)**- Enables interoperability of a wide range of data capturing interaction of users with digital learning tools, content and platforms.
- **Competency Framework, Open Badges for Education, extended Transcript**- Enables interoperability of learning standards and digital micro-credentials within institutional systems and among credential issuers and users.

Conformance Certification

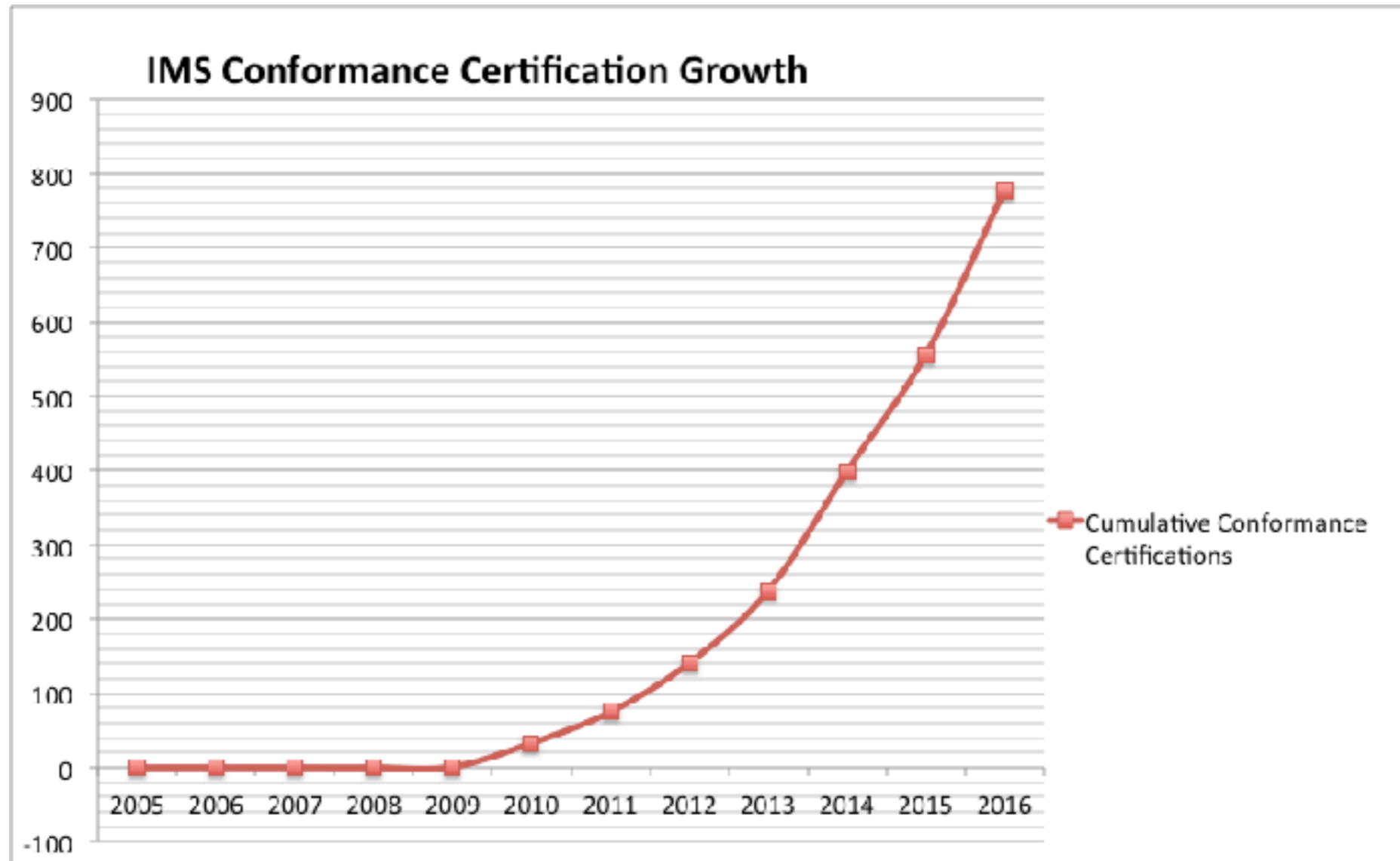
Conformance Product Directory

- Official listing of products guaranteed to meet the IMS benchmarks.
- IMS certified products implement the open architecture.
- IMS also provides:
 - The standards.
 - Code libraries.
 - APIs.
 - Reference implementations.





Current Registrations:
imscert.org



Adoption of certified applications/digital resources enables any application to seamlessly plug into another without requiring costly and timely custom integrations and share data to aid understanding of use of digital resources & student progress

Better Learning From Better Learning

PRODUCT DIRECTORY

BUY IMS CERTIFIED

GET IMS CERTIFIED

Watch 3-Minute Overview

IMS Annual Report

Learning Impact Research Report

Learning Impact Leadership Institute

How Does IMS Enable Better Digital Learning Experiences?



Seamless plug & play
integration

Creates better **user experiences** & enables
greater educational **insight**.



Agile open architecture &
extensive ecosystem

Enables **flexibility, efficiency & choice**.



Effective member-based
collaboration

Means getting to the **future sooner** with
sustainable progress.

<https://www.imsglobal.org/cc/statuschart.cfm>



Competency Based Education (CBE)

Open Badges

IMS' Digital Credentials Vision

Free and open standard

Rigorous, relevant and trusted

Controllable by the learner

Portable and transferrable

Valued and **connected** through data **to employers**



IMS Global, Mozilla Foundation, and LRNG Announce Next Steps to Accelerate the Evolution of the Open Badges Standard

[Printer-friendly version](#)

IMS Global, Mozilla Foundation, and LRNG Announce Next Steps to Accelerate the Evolution and Adoption of the Open Badges Standard

Mozilla Foundation and Collective Shift/LRNG to Transition Management of the Popular Open Badges Project to IMS Global to Ensure Long-term Support and Sustainability

LAKE MARY, Florida, 28 October 2016 – IMS Global Learning Consortium ([IMS Global/IMS](#)), the world leader in EdTech interoperability and innovation, the [Mozilla Foundation](#), and [Collective Shift/LRNG](#) announced today an agreement for IMS Global to become the organization responsible for advancing the development, transferability, and market adoption of the [Open Badges](#) specification beginning January 1, 2017. As an open-governance, member-based standards consortium, IMS Global is committed to furthering the adoption, integration, and portability of digital badges to meet the needs of learners, educators, and employers.

"IMS is the smart choice for the next step in the evolution of the Open Badges initiative," said Mark Surman, executive director of the Mozilla Foundation, who serves on the Badge Alliance Steering Committee along with Dr. Rob Abel, CEO of IMS Global, and Connie Yowell, CEO of Collective Shift/LRNG. "The IMS community shares the values of openness and collaboration that have driven this project since its launch in 2011." Both the Mozilla Foundation and LRNG will become IMS Contributing Members to help lead and support the evolution of the Open Badges standard.

"I look forward to working with the IMS member community to build on the momentum gained by Mozilla and Open Badges contributors, as well as address some of the challenges identified, such as articulating the value of digital credentials," said Connie Yowell. "IMS is bringing together the wide range of stakeholders dedicated to working together to accelerate progress." Open Badges started as a Mozilla-led project funded by the MacArthur Foundation that included the creation of the Badge Alliance community to help organize adoption. The work of the Open Badges community will continue via IMS Global, facilitated by a revamped website featuring both technical evolution and badge adoption community activities.

"The IMS community is a very good fit for this effort because of our leadership in the education technology market, our collaborative K-20 and EdTech supplier member network, and our existing investments in [enabling better digital credentialing](#), specifically our focus on Open Badges extensions for education, the extended transcript, and competency-based education," commented Dr. Rob Abel. "Working closely with Mozilla Foundation and LRNG over the last year has confirmed that this move should help to accelerate development of the open badges product ecosystem."

IMS is inviting Open Badges contributors, who have invested their time and talent in this movement, to join a new Open Badges Community Council. The Community Council will be a channel to showcase thought leadership around Open Badges and provide guidance to IMS activities. IMS will also be forming an executive leadership council for [IMS member organizations](#) that are actively contributing to market development and adoption. During the transition, the Open Badges community is actively working towards the release of Open



What are Open Badges?

Open Badges are verifiable, portable digital badges with embedded metadata about skills and achievements.

The Open Badges Specification is a general purpose semantic web vocabulary and set of verification tools for describing and understanding any achievement.



Open Badges Data Model Overview

Extensible Linked Data/RDF data model, expressed primarily as JSON-LD, but can translate to/from XML, N-Quads, etc.

Can add domain-specific metadata and make it reusable through Open Badges Extensions.

Possible examples:

Badge level or grade level

Hours / credits / points

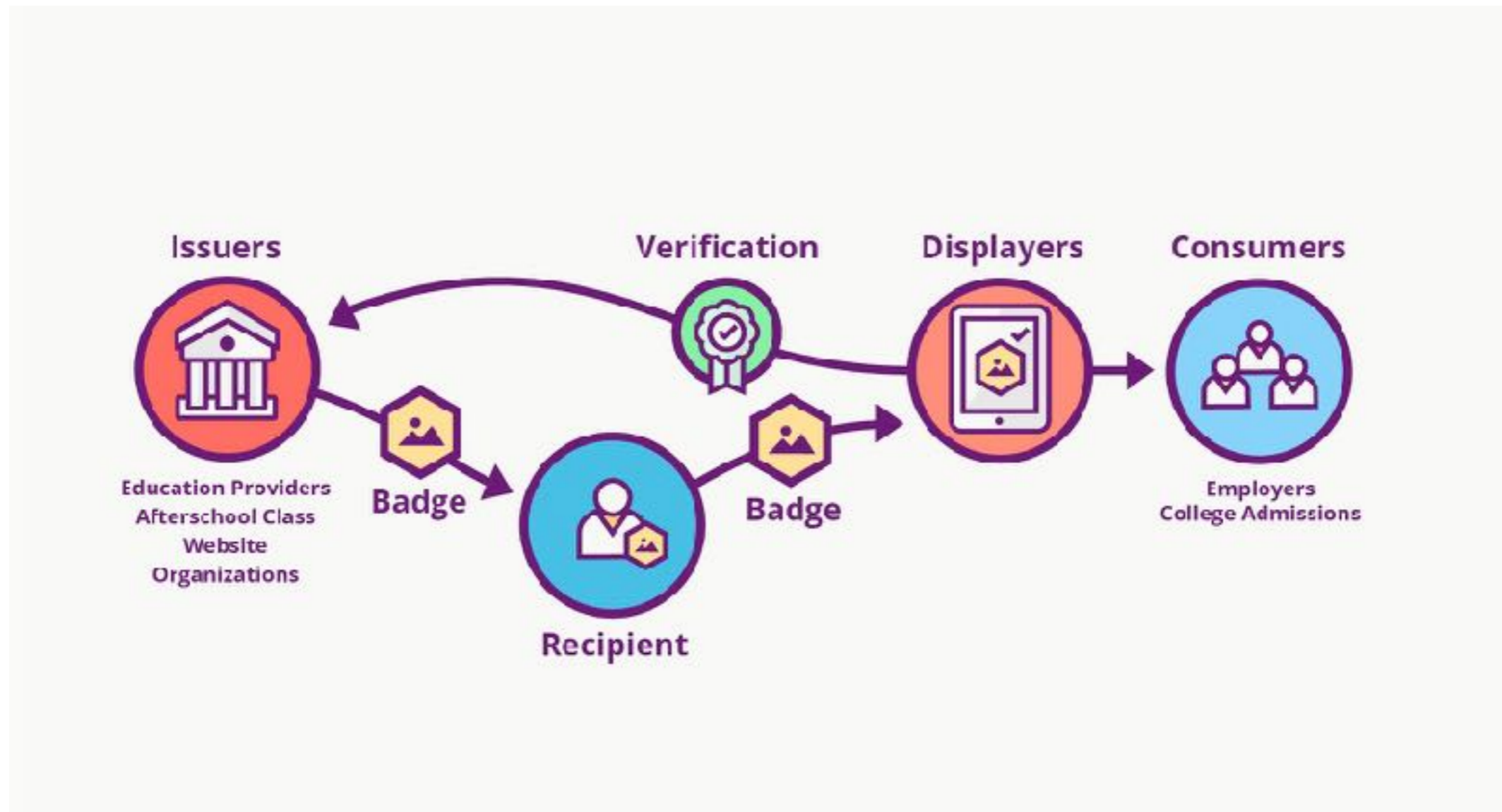
Alternate certification name

Evaluator / assessment information

Additional issuer or recipient identifiers



Open Badges Ecosystem Overview



Open Badges Data Model Improvements

Rich criteria and evidence vocabularies to bring more metadata into the machine-readable components of the badge.

Additional properties to identify recipients besides email addresses. (New: Issuers can be recipients of badges)

Internationalization/localization using JSON-LD's @language tag.

Supporting *embedding*

Open Badge Extensions for Education (OBEE)

- **Focused on the employer** as the primary badge consumer
- Refining badge contents using **standard extensions**
- A simple **classification framework** to define minimum **badge requirements of rigor for education**
- Certify technical compliance and portability through **IMS-based online compliance certification**
- Research embedding data for analytics
- Explore ways to maximize search and discoverability

Two new “extensions” - proposed additions to the spec

Assessment

Accreditation

What is the Assessment extension?

Provides information about a single or multiple assessments that are required of a recipient of an Open Badge. Separate, independent evaluations of a single assessment could result in multiple assessment/evaluation records, all included in a single instance of the extension.

Minimum required data:

Assessment type (keyword): Exam, Performance or Artifact

Participation context type (keyword): Individual or Group

Assessment Description (Text)

Evaluation (URL): Information about how the assessment is scored. e.g. What do the scores represent in a range of scores? If a rubric was used, what are the score ranges for each criteria?

What is the IssuerAccreditation extension?

Provides a reference to a single or multiple accreditation bodies as related to the *IssuerOrganization* of an Open Badge

Minimum required data:

legalName: The official name of the organization, e.g. the registered company name

contactInstructions: Contact instructions for an accrediting organization

url: URL of the organization

address Physical address of the organization

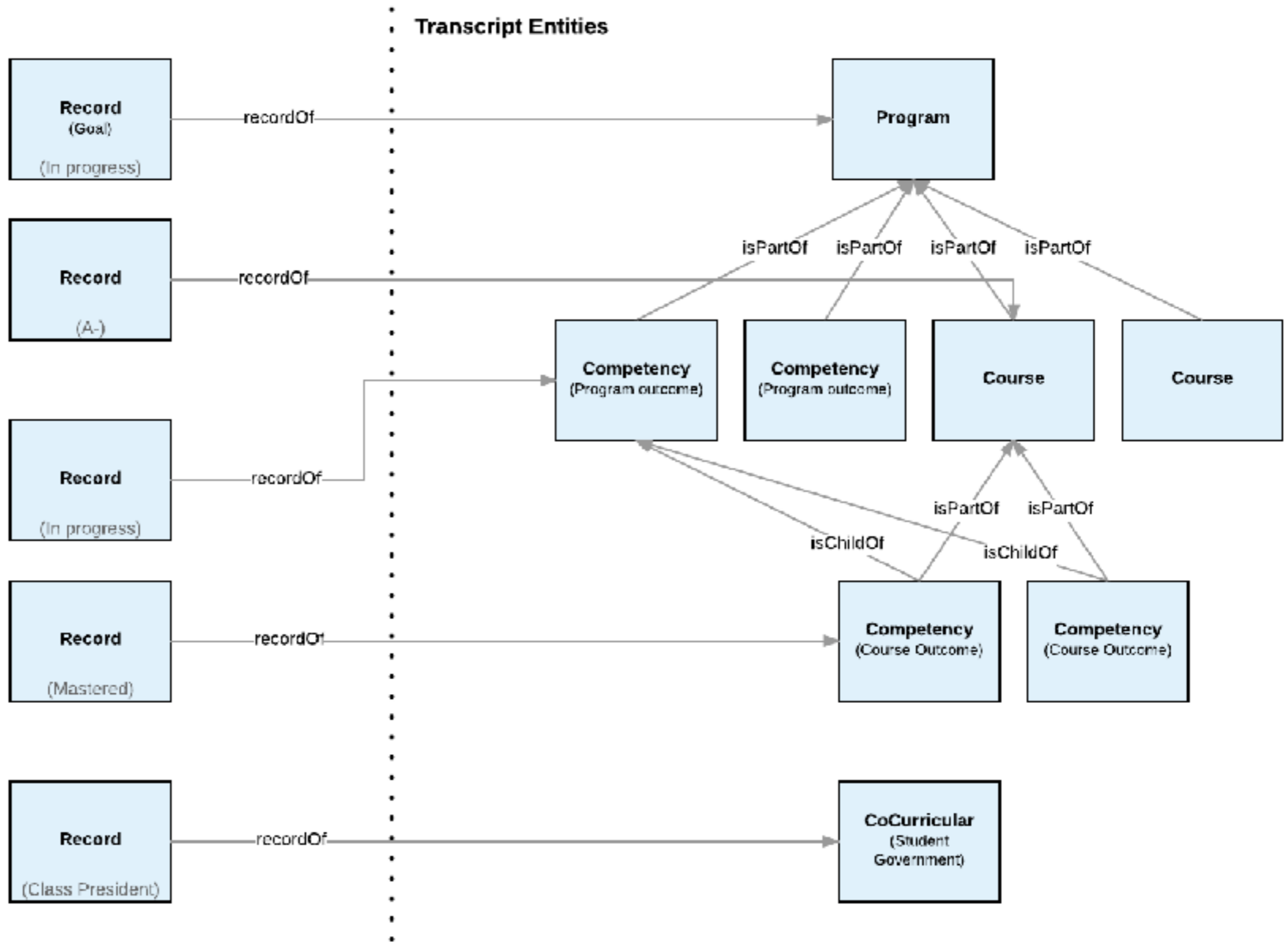
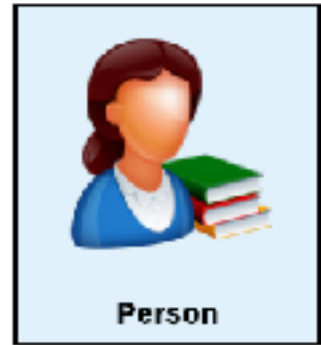
Underlined items are consistent with definitions in schema.org

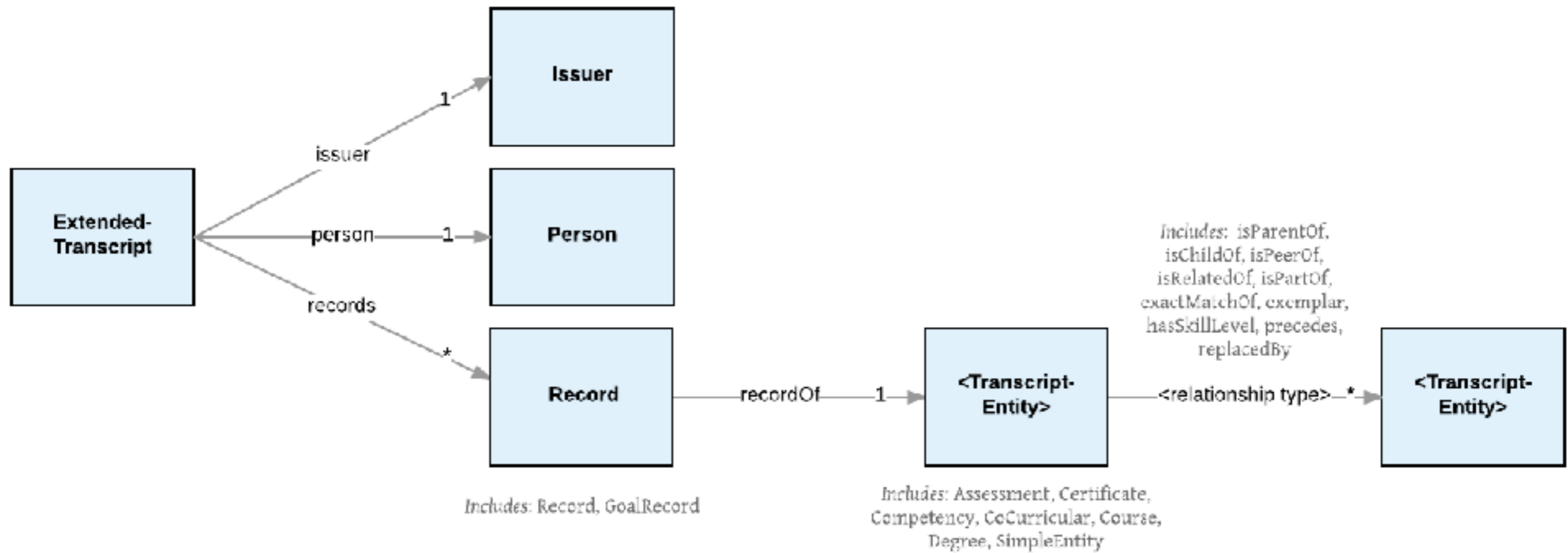
Extended Transcript



Guidelines for the Extended Transcript

Academic/Business Requirements	• Registrar controlled	• AACRAO guidelines
	• Issued by Institution	• Shareable by learner
	• Web-based eTranscript	• Secure and private
	• Authentic, unalterable	• Printable
Technology Implementation	• Machine Readable, Digitally Signed	• Supportive of SPEEDE and other outputs (e.g. PDF)
	• Linkable via URI to other resources (JSON/LD)	• An IMS context of Open Badge specification





Extended Transcript Phase II

Achievement Records Store and
SkillsCenter Search™

COMPETENCY RECORD ⓘ

This is an official transcript.
Learner information is guaranteed unaltered from the source.

BACHELOR OF A
Associate Of Arts & S

eT Phase I Was a Big Success

PSY 202 - Introductory Psychology

Semester: January 2015

Credits: 3

Grade: A

Competencies (6 complete, 6 total)

- ✔ Explain the basic methods of research used by psychologists and the reasons for these.
- ✔ Apply knowledge of physiology to human abilities and limitations.
- ✔ Apply basic concepts from development, personality, and social psychology to real-life situations.

Mastery

Mastery

Mastery

More...

BIOL 141 - Heredity

Semester: April 2015

Credits: 3

Grade: B

Competencies (14 complete, 14 total)

- ✔ Describe genetics as a discipline.
- ✔ Explain the role cell components, cell division, and stem cells play in cellular reproduction.

Mastery

Mastery

Order A Transcript

 Print

Phase 1 of the Extended Transcript (eT) produced a standardized file specification that supports courses, competencies and co-curricular achievements. The eT record can be displayed via an engaging web experience for the learner.

This image is used by permission of IMS members University of Wisconsin Extension and Learning Objects.

Benefits of Extended Transcript

The benefits of the extended transcript (eT) are recognized by students. 80% of pilot participants recommended eT for all students

However, administratively, sourcing the eT data was a struggle. In most institutions, **no one system contains all of the necessary data** to produce eT. A new strategy and is needed for **achievements management** in learning organizations

Issues with the Current Situation

- Student information systems (SIS) do not supporting competency based curricula, but do support course based achievements, competencies are stored separately
- Records of mastery emit from a learning management system (LMS) or assessment tool
- Separate or external systems manage internships and co-curricular activities - the necessary data for eT is widely distributed

Solution for the Current Issues

- The various sources of achievements data must be collected and managed in a strategic **system of record for achievements** based upon the eT standard
- An Achievements Record Store (ARS) standard

Why an eT ARS Standard?

Knowledge, skills and achievements earned by students represent **valuable assets** that the learners want to share with the outside world

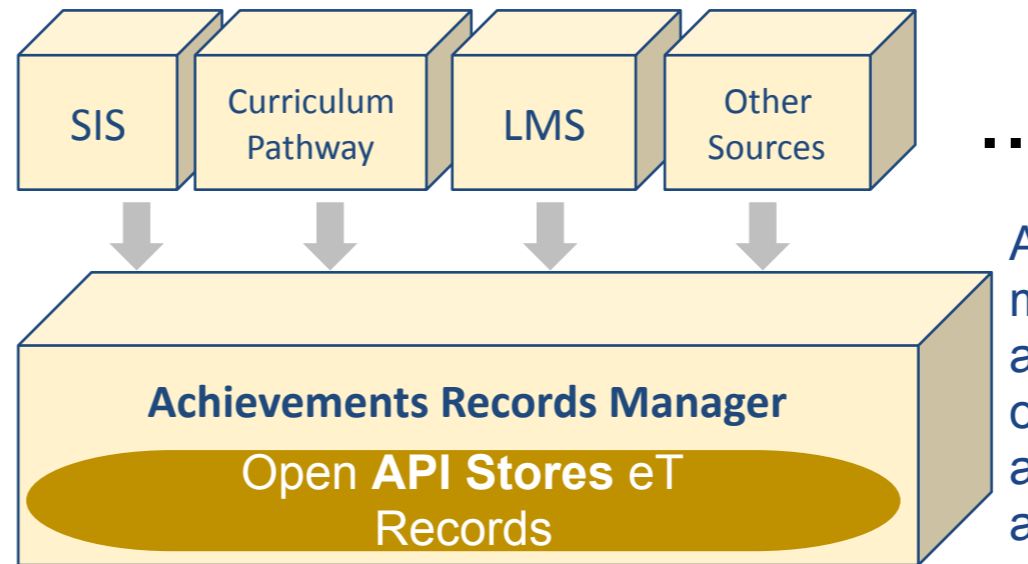
Data is buried in proprietary databases which cannot support a scalable ecosystem

Badges are important as achievement recognitions, many but **not all knowledge, skills and achievements will be “badged”**

eT Phase II

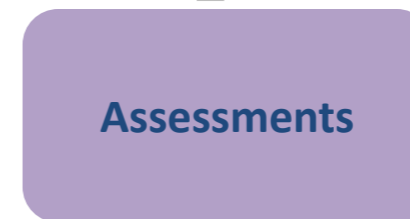
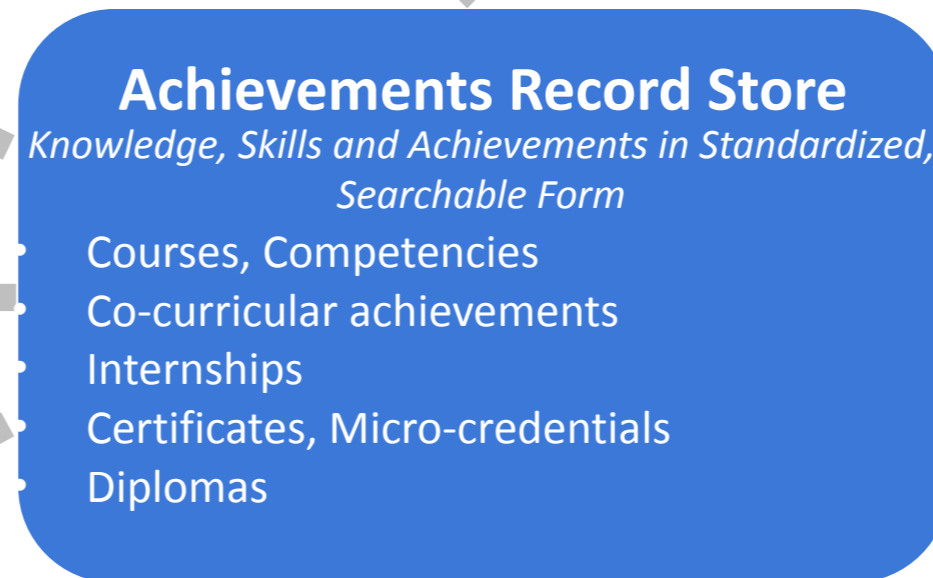
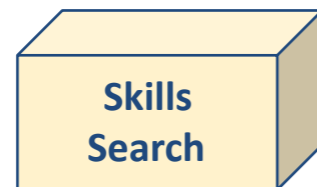
The Achievements Record Store

The **Achievements Records Manager** is a system process that collects required skills, achievements and credentials data from the systems of origin and publishes the eT records in the CRS.



An open API in the records manager stores the eT records and ensures that no more than one eT is active for a learner at any time. Earlier eT records are changed to archival status.

All of a learner's knowledge, skills and achievements may not be badged, but they are available for SkillsCenter Search.



Through the use of linked data (json-ld), supporting documents can be readily associated.

Phase III of the work will provide a secure, digital **Personal Achievement Record** to the Learner

eT Phase II SkillsCenter Search™

Based upon eT, the IMS digital Extended Transcript Specification 1.0.

The achievements record store (ARS) is the system of record for learners' skills, achievements and credentials

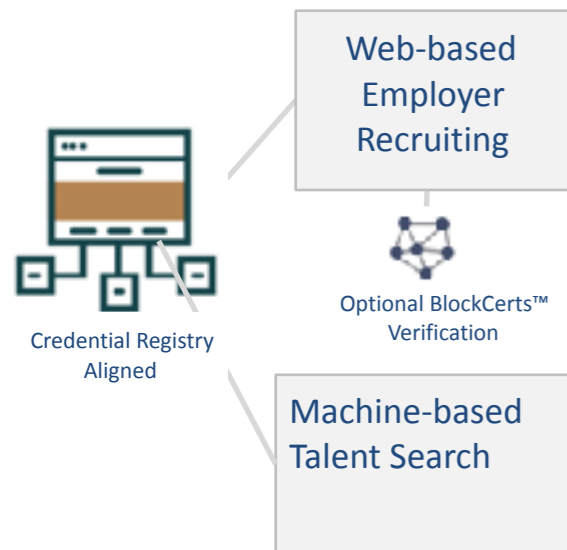
SkillsCenter™ is a standards-based achievements records store. Searchable because is standardized and supported by open API's. Secured by institution-controlled firewalls and protections.

Credential can be recorded in a permanent ledger using BlockCerts™ and subsequently verified for validity and trust, most critical for high stakes credentials.

The eT SkillsCenter is free and supports each institution's mission to help their students find employment using secure, 21st century methods.

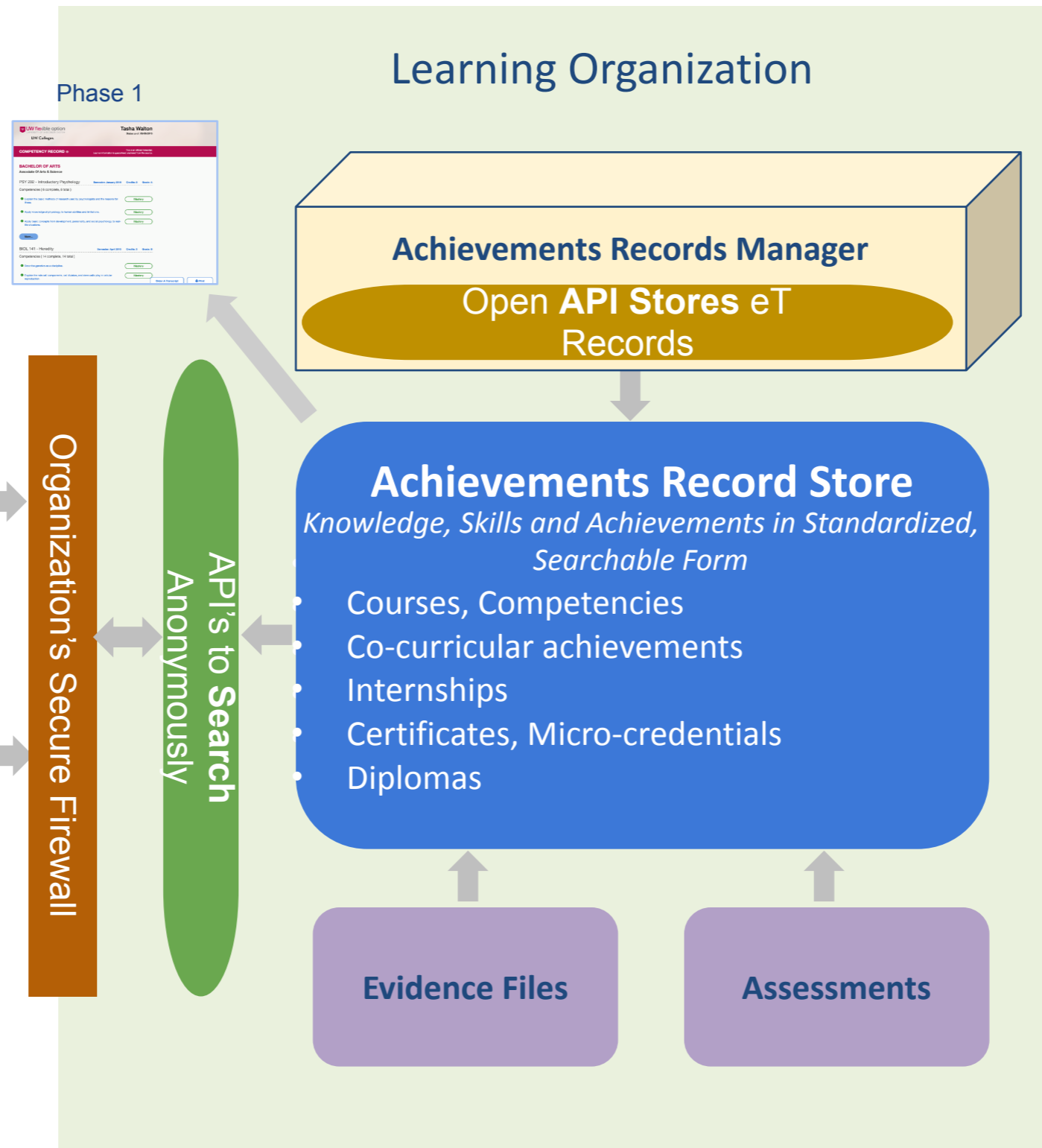
SkillsCenter Search™

Employer recruiting platforms will have authorized, controlled access to the institution's SkillsCenter achievement record store, where anonymized candidate matching can occur.



Individual's credentials may when applicable) link to the Credential Registry, a national catalog.

Selected credential can be recorded and verifiable via BlockCerts™ Distributed Ledger.



Phase III - Personal Achievements Management

Learners need unencumbered access to their digital credentials (badges, micro-credentials and eTranscripts) to store in their “folio”

No controlling system should be required to collect, store and secure a copies of one’s credentials

Systems to allow custom presentation and sharing will continue to develop in the market



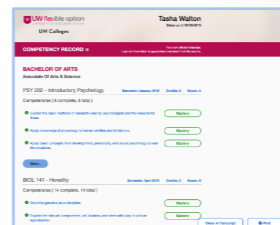
Personal Achievements Folio



Export Digital Credentials

- Badges
- Micro-Credentials
- eTranscripts

PAF - A lightweight specification supporting learner identity and security



Save/Manage



Folio Management Platforms will support self-curation, employment search and discovery

Curriculum



IMS GLOBAL[®]
Learning Consortium

OneRoster



Provision key roster related data including student, course and related enrollment information between various platforms such as a student information system (SIS) and a learning management system (LMS).



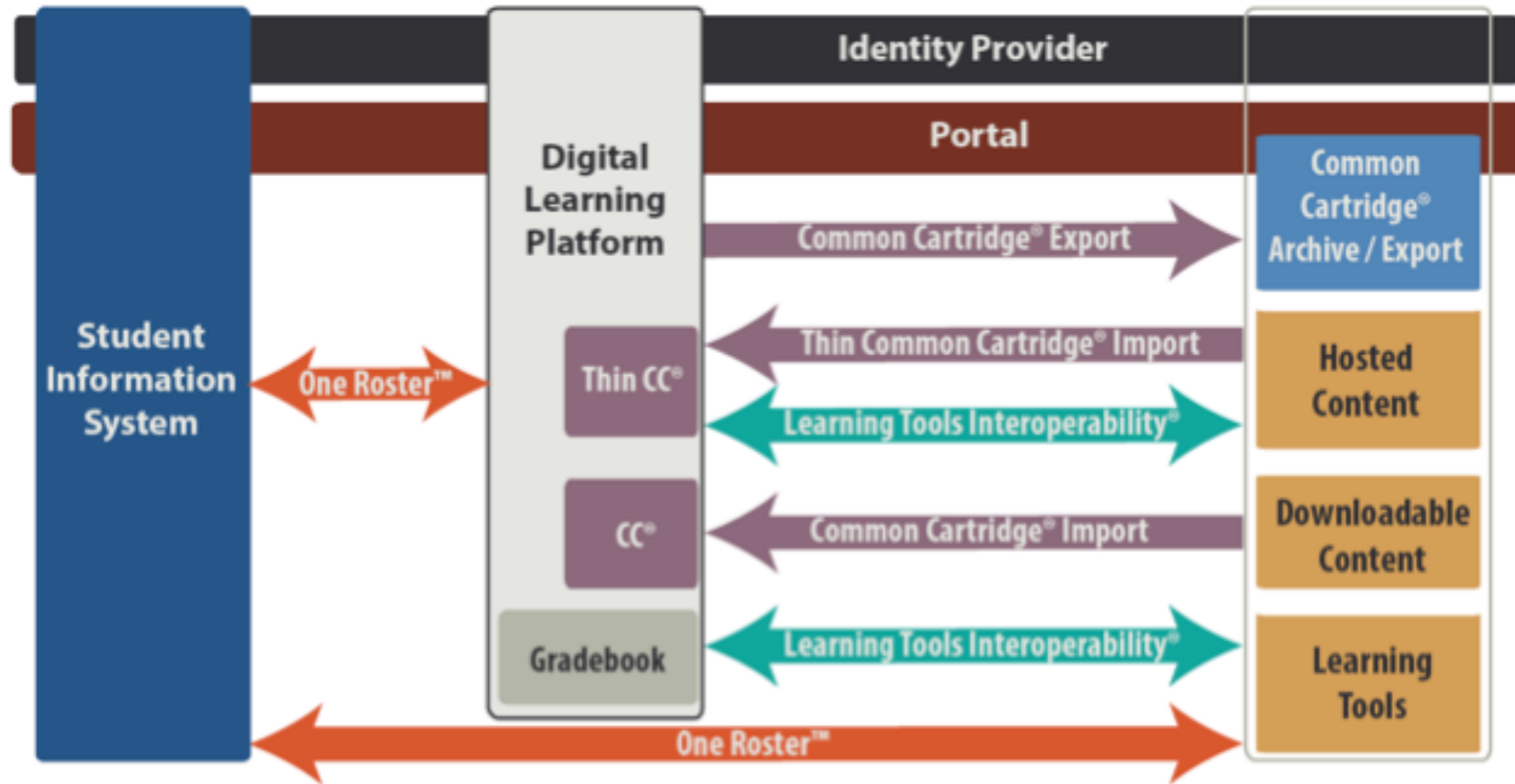
Flexible implementation options to align with an institution's needs and capabilities, supporting simple spreadsheet-style (CSV) exchanges as well as system-to-system exchanges using REST API's



Improves data exchange among multiple systems with roster and gradebook information, thus eliminating problems before they happen



Transmit scored results between applications, such as student scores from the LMS back to the SIS.



For OneRoster the information being exchanged is collated in three groups:

- **Class Rosters** - the set of people enrolled on a class at a site and for a set period;
- **Resources** - to identify the set of resources that are required for a class and/or a course;
- **Gradebooks** - the data is broken into results, lineitems (a set of results) and categories (a set of lineitems)

Houston ISD Ecosystem

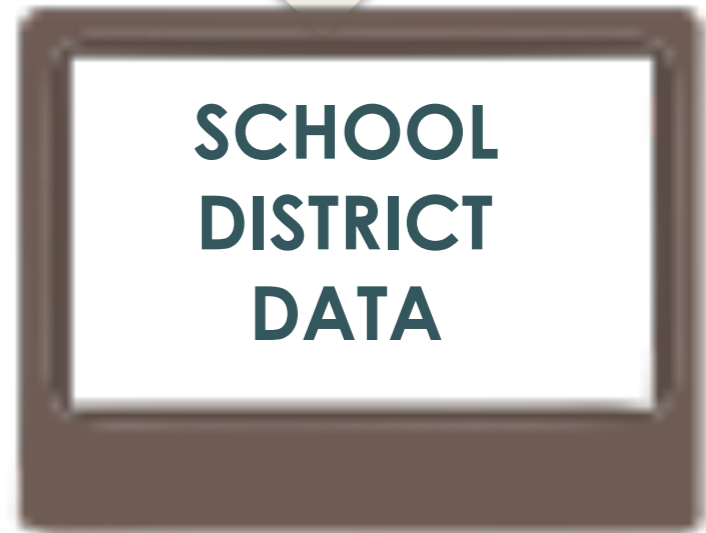
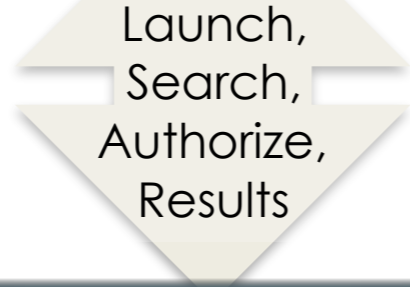


IMS
Open
Standards:

LTI®

Thin Common Cartridge®

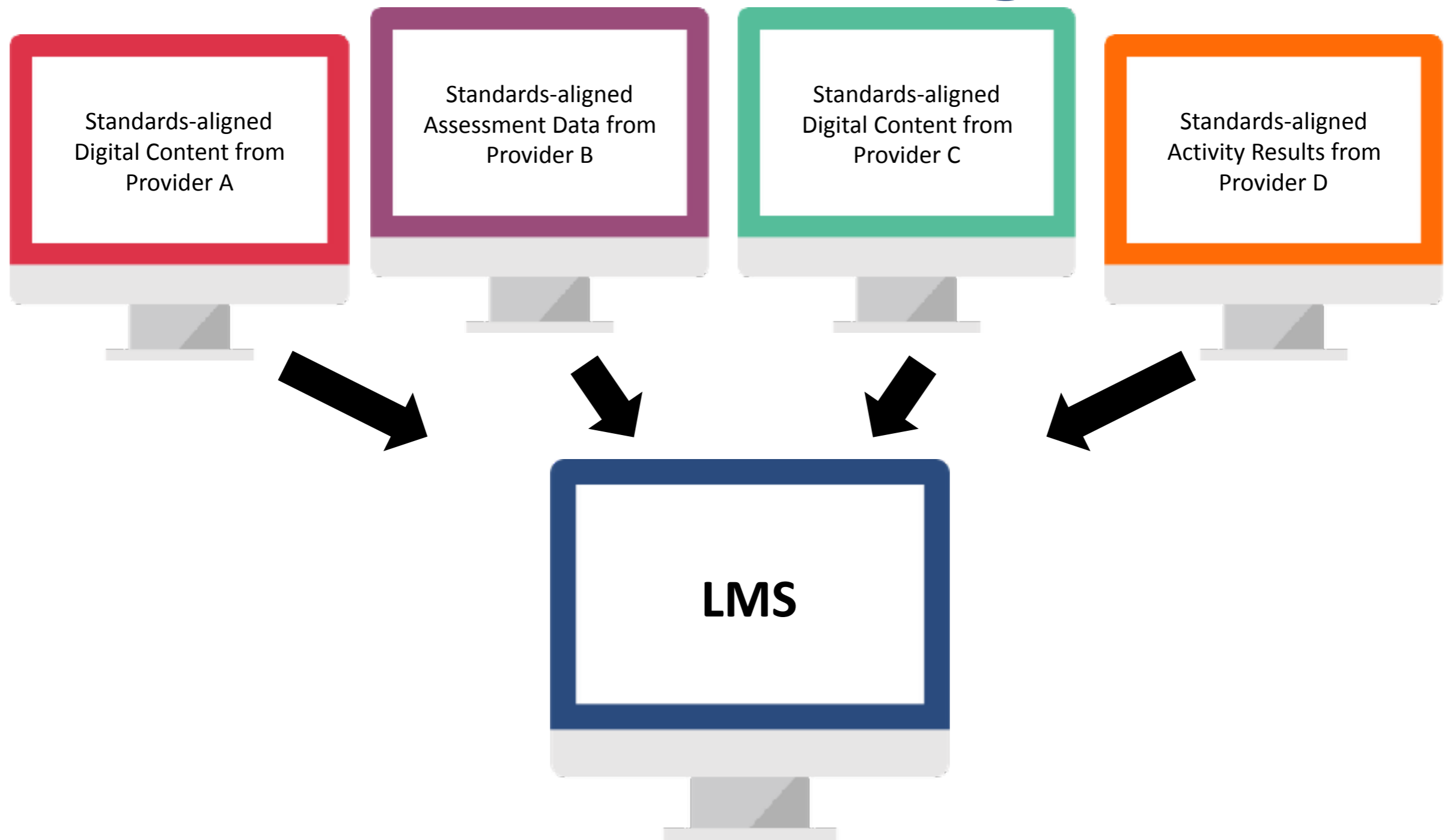
OneRoster™



Competencies & Academic Standards Exchange (CASE)



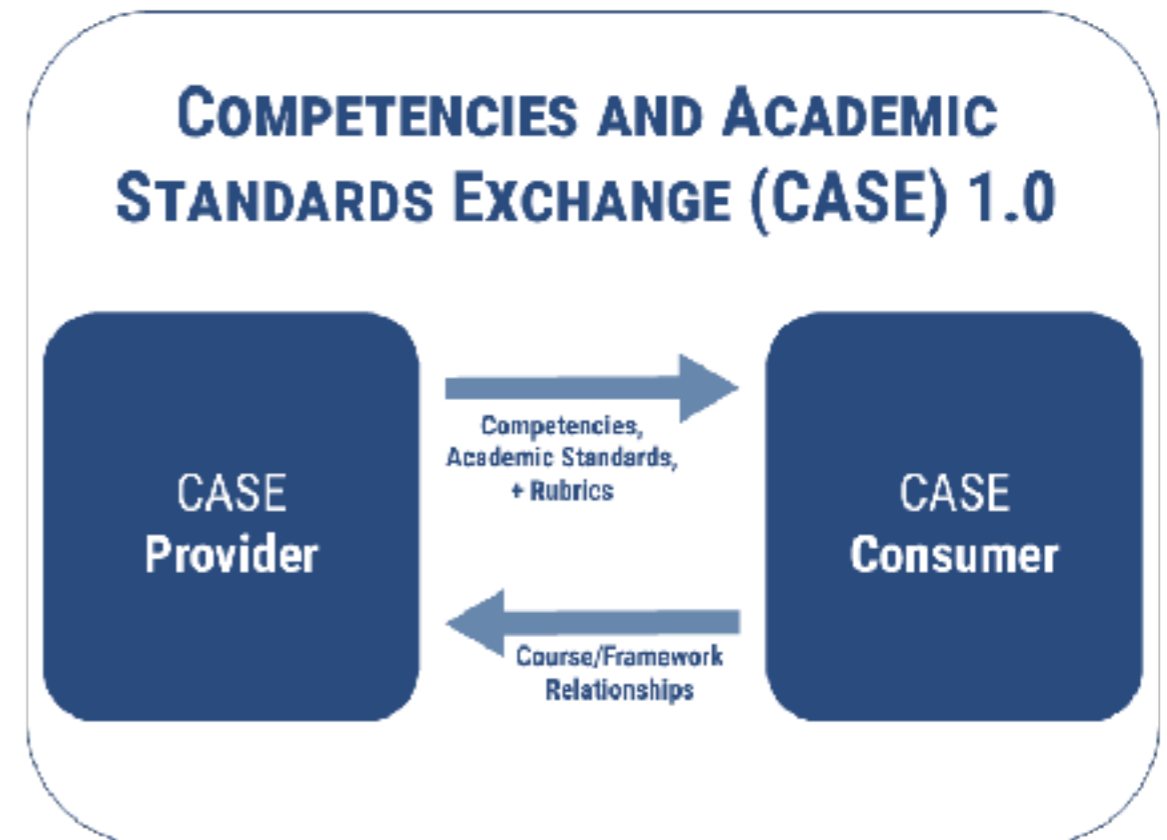
The Challenge



Competencies & Academic Standards Exchange

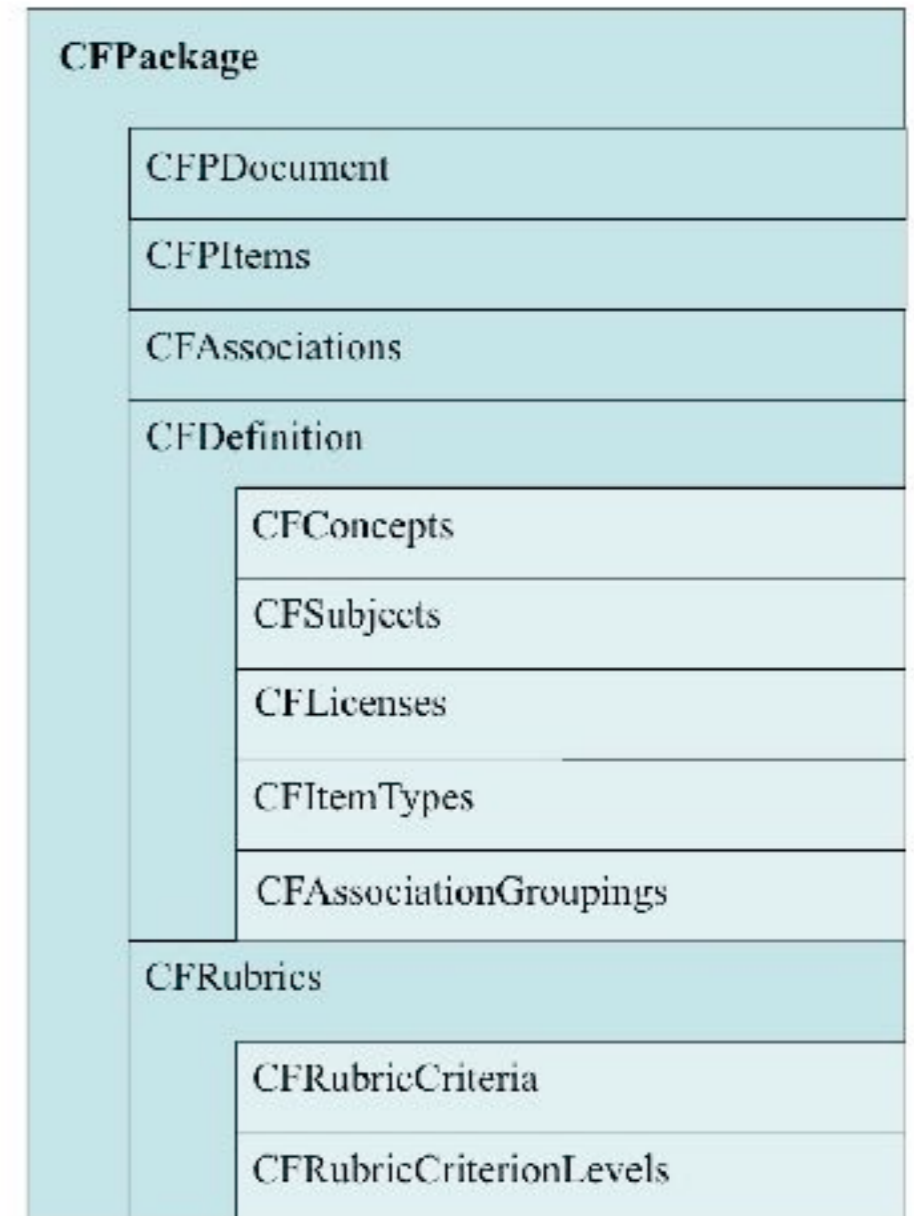
A defined method for

- Representing academic standards digitally
- Representing relationships to other academic standard sets
- Representing rubrics (criteria & performance level) that may be aligned to learning standards



CASE includes the following key attributes:

- The original competencies or academic standards (document)
- Machine-readable statements of what the learner will know and be able to do (items)
- Explanations of relationships between standard sets and/or among individual standards or courses where applicable (associations)
- Guides listing specific criteria for grading or scoring academic papers, projects, or tests (rubrics)



CASE Task Force Status

- The task force has been meeting since February 2016 and working through the effort of creating the specification
- We have a draft specification that is now moving through IMS formalization
- We have a number of pilots under way that are vetting the framework specification.
- Florida, Texas and Wisconsin have active projects to publish their Learning Standards in the new format
- A number of vendors are engaged in these pilots along with districts in the respective states
- Tool sets are being built and tested



Learning Tools Interoperability (LTI)

Benefits of IMS Learning Tools Interoperability® (LTI®)

DEVELOP



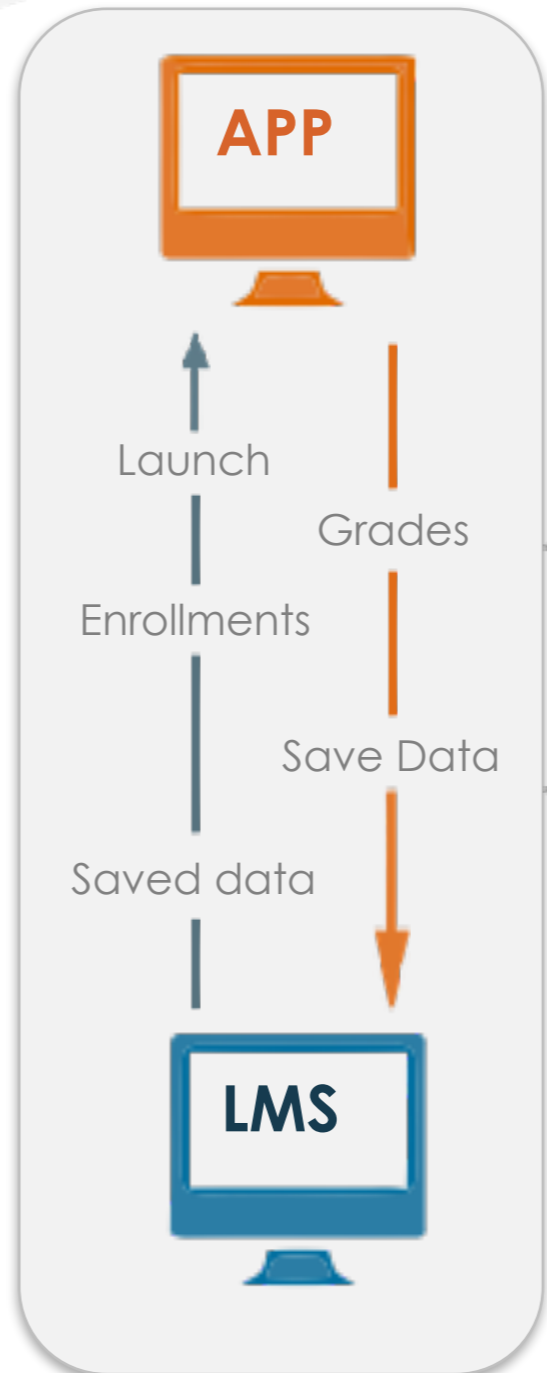
Learning application developer

Hey, this is great, I just need to write one integration using my own language of choice

This certainly beats having to upgrade our systems every time we add a new application



Portal or learning platform administrator



Learners

This is way better; no more separate logins, everything is available from within our online course.

Wow, I can now link to new applications myself and get instant access!



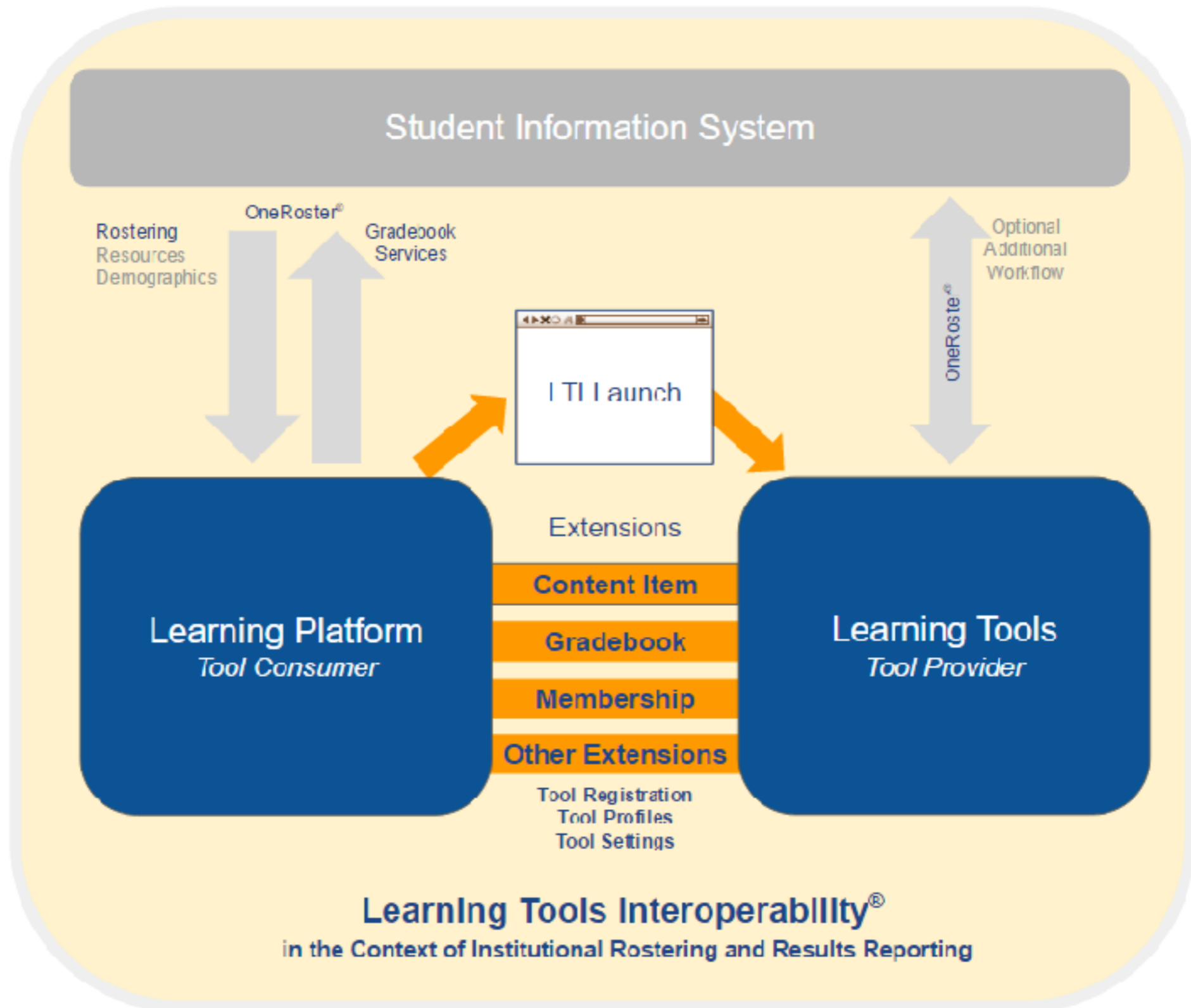
Teachers

UTILIZE



DEPLOY





Content-Item Message	Provides a one-step way to add content and links to an LMS platform from the content tools.	LTI 1.0
Gradebook Services	Solves the need for grades to be passed back to the LMS Gradebook from learning tools.	LTI 1.1 (Basic Outcomes Service), LTI 1.2 (Gradebook Services 2.0)
Membership Services	Sends a list of participants enrolled in a course to a learning tool.	LTI 1.2
LTI Content Packaging	Using TCC. Presents a <i>table of contents</i> of course materials which reside in a cloud-based repository and uses LTI to launch the content for inclusion in an LMS platform	Any

Registration Message

Automates pairing between a tool and learning platform, avoiding the need to send tool credentials (key and secret) manually and in potentially insecure ways. Enables a tool to be configured automatically within the LMS.

LTI 2.0

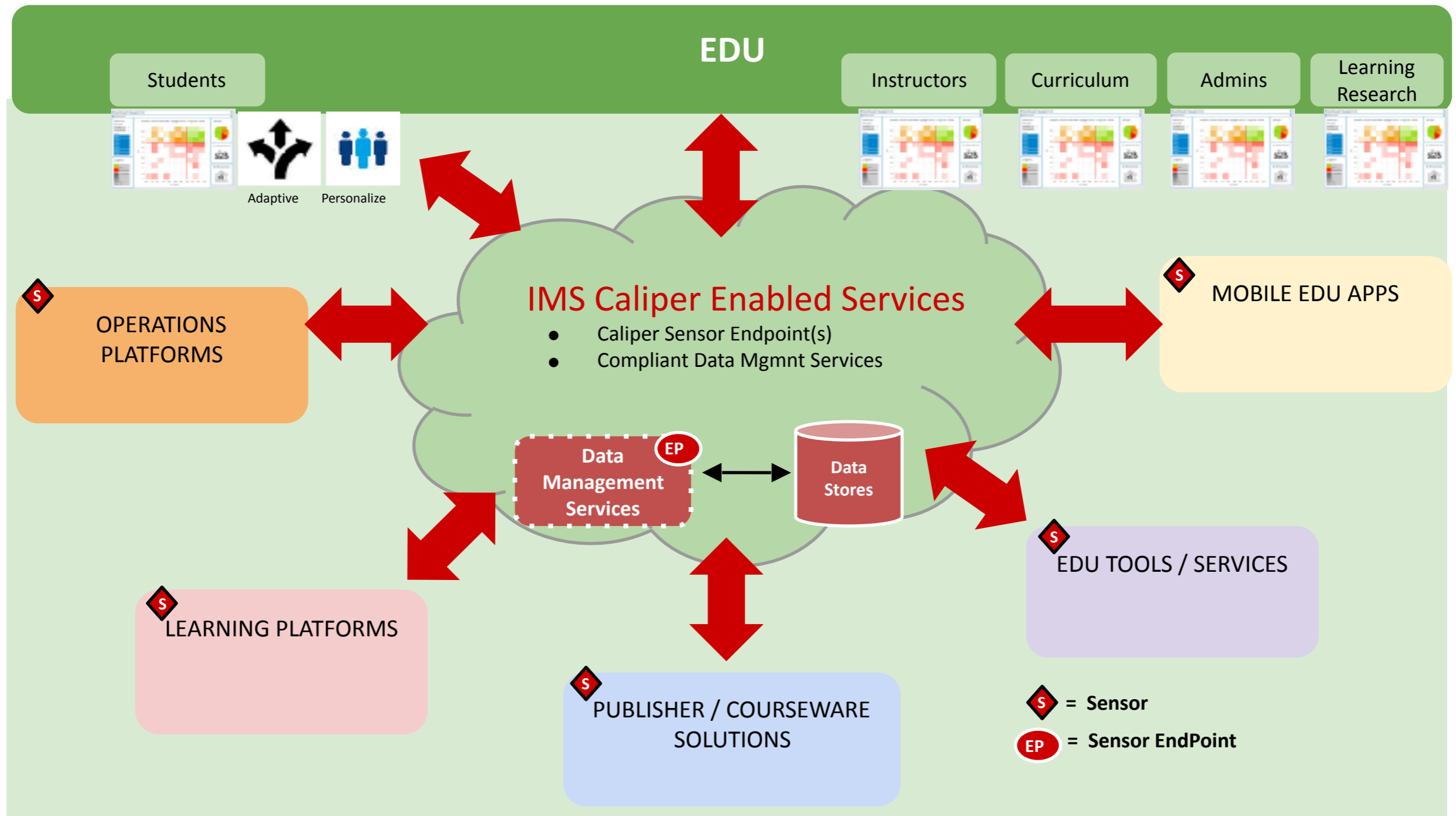
Tool Settings service

Allows a tool to use the LMS for storing data to be returned when it communicates back to the tool.

LTI 1.2 LTI 1.1 (Basic Outcomes Service), LTI 1.2 (Gradebook Services 2.0)

Analytics

Caliper = Learning Analytics Ecosystem



Scope: Caliper 1.x

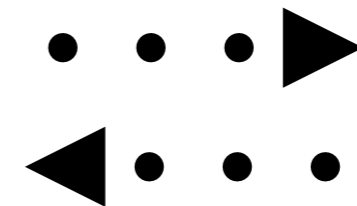
instrument



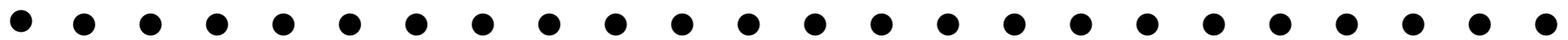
persist



use



feedback



Scope: Caliper 1.x

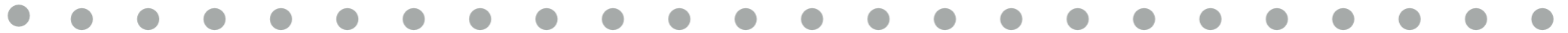
instrument



persist



use



Caliper latest (1.1)

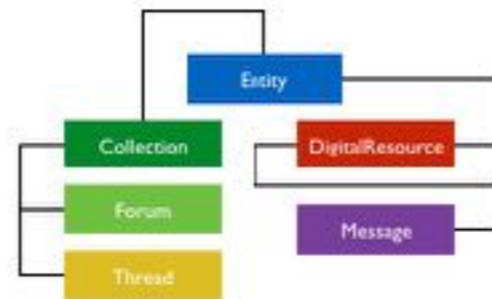
doc rewrites



spec
impl guide
ontology

event model revisions

Discussion Forum Profile



created
deleted
updated
removed

markedAsRead
markedAsUnread
posted
subscribed
unsubscribed

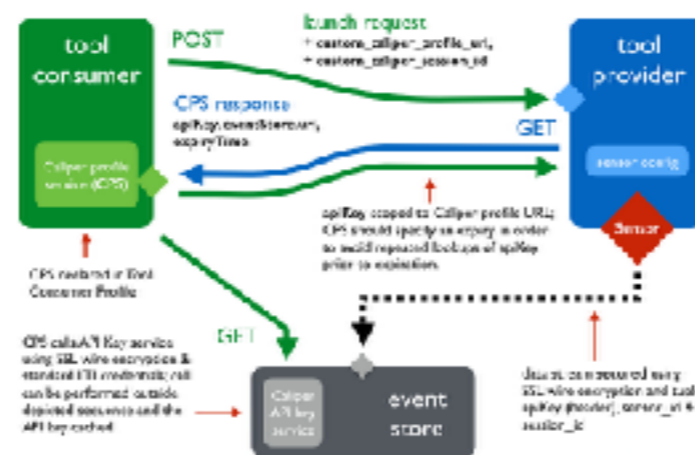
payload thinning

```
{
  "sensor": "https://example.edu/sensor/001",
  "sendTime": "2015-09-15T11:05:01.000Z",
  "data": [
    {
      "@context": "http://purl.imsglobal.org/ctx/caliper/v1/Context",
      "@type": "http://purl.imsglobal.org/caliper/v1/Event",
      "actor": {
        "@id": "https://example.edu/user/554433",
        "@type": "http://purl.imsglobal.org/caliper/v1/lis/Person",
        "action": "http://purl.imsglobal.org/vocab/caliper/v1/action#Viewed",
        "eventTime": "2015-09-15T10:15:00.000Z",
        "object": {
          "@id": "https://example.com/viewer/book/34843#epubcfi(/4/3)",
          "@type": "http://www.idpf.org/epub/vocab/structure/#Volume"
        }
      }
    }
  ]
}
```

cert suite
upgrade



LTI integration



sensor updates



caliper-java
caliper-js
caliper-python
caliper-php
caliper-ruby
caliper-net



Caliper code repos (Github)

sensors

caliper-java
caliper-js
caliper-ruby
caliper-python
caliper-php
caliper-net

docs

caliper-spec
caliper-ontology
caliper-impl-guide

cert suite

caliper-conformance-tests

sample code

caliper-java-example
caliper-js-example
caliper-net-example

support

caliper-central
caliper-contexts
caliper-common-fixtures



public

caliper-java-public
caliper-js-public
caliper-ruby-public
caliper-python-public
caliper-php-public
caliper-net

Caliper profiles

current

Basic

Assessment

Forum

Media

Annotation

Reading

Assignable

Session

Outcome

ToolUse

Authoring

Credentials

Feedback

Participation

Problem Set

QTI

Search

Simulation

Social

Survey

Entity Mgmt



new entities?

Badge

Survey

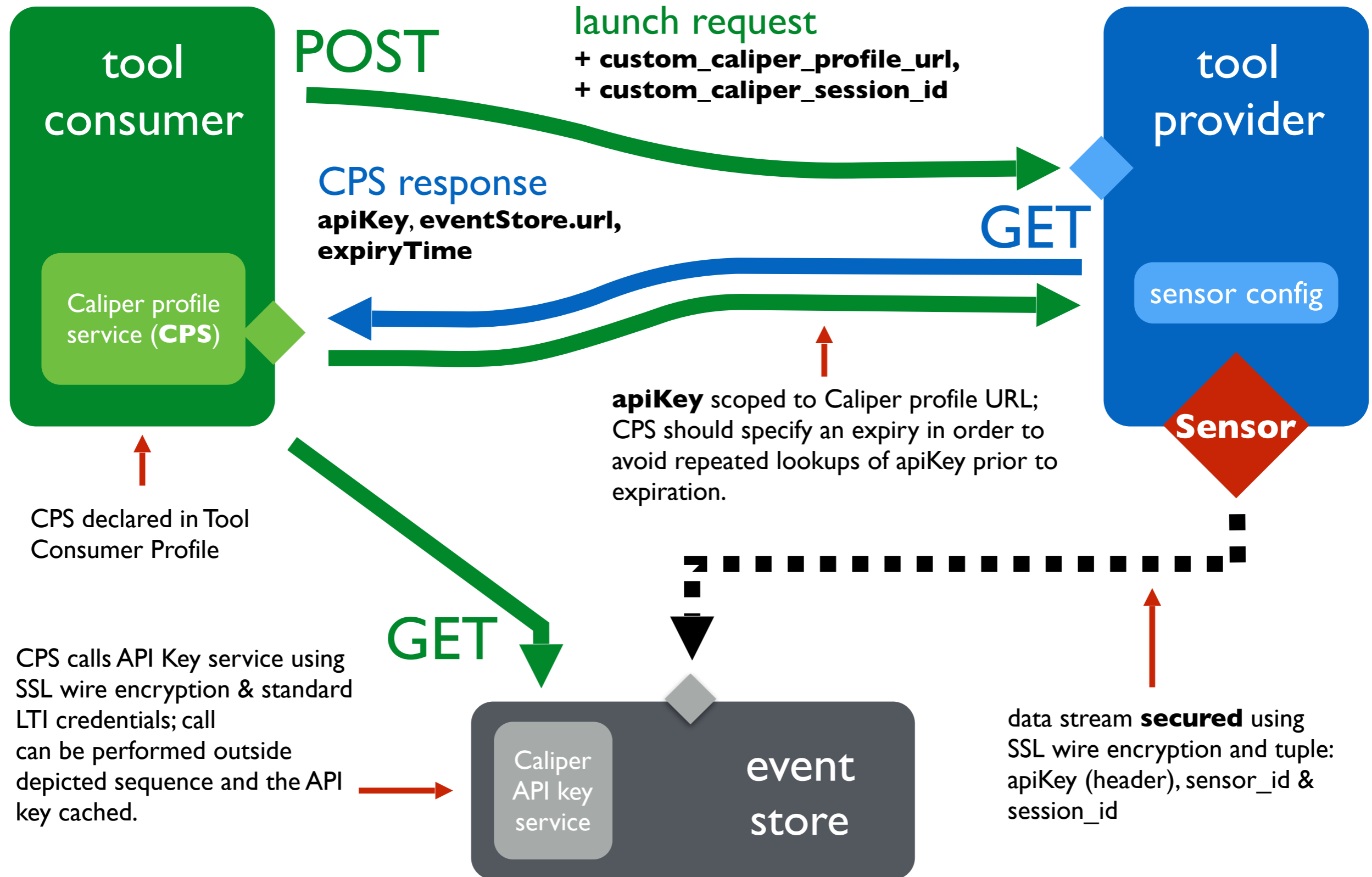
Location

Problem

Rating



Caliper/ LTI 1.x workflow



IMS Global Announces Caliper Analytics Progress and Plans

Caliper v1.1 Release, Formation of Executive Product Steering Committee, and Future Support for xAPI are in the Works

LAKE MARY, FLORIDA (PRWEB) MARCH 13, 2017

IMS Global Learning Consortium ([IMS Global](#)), the world leader in EdTech interoperability and innovation, announced plans for the next year in support of the emerging field of learning analytics.

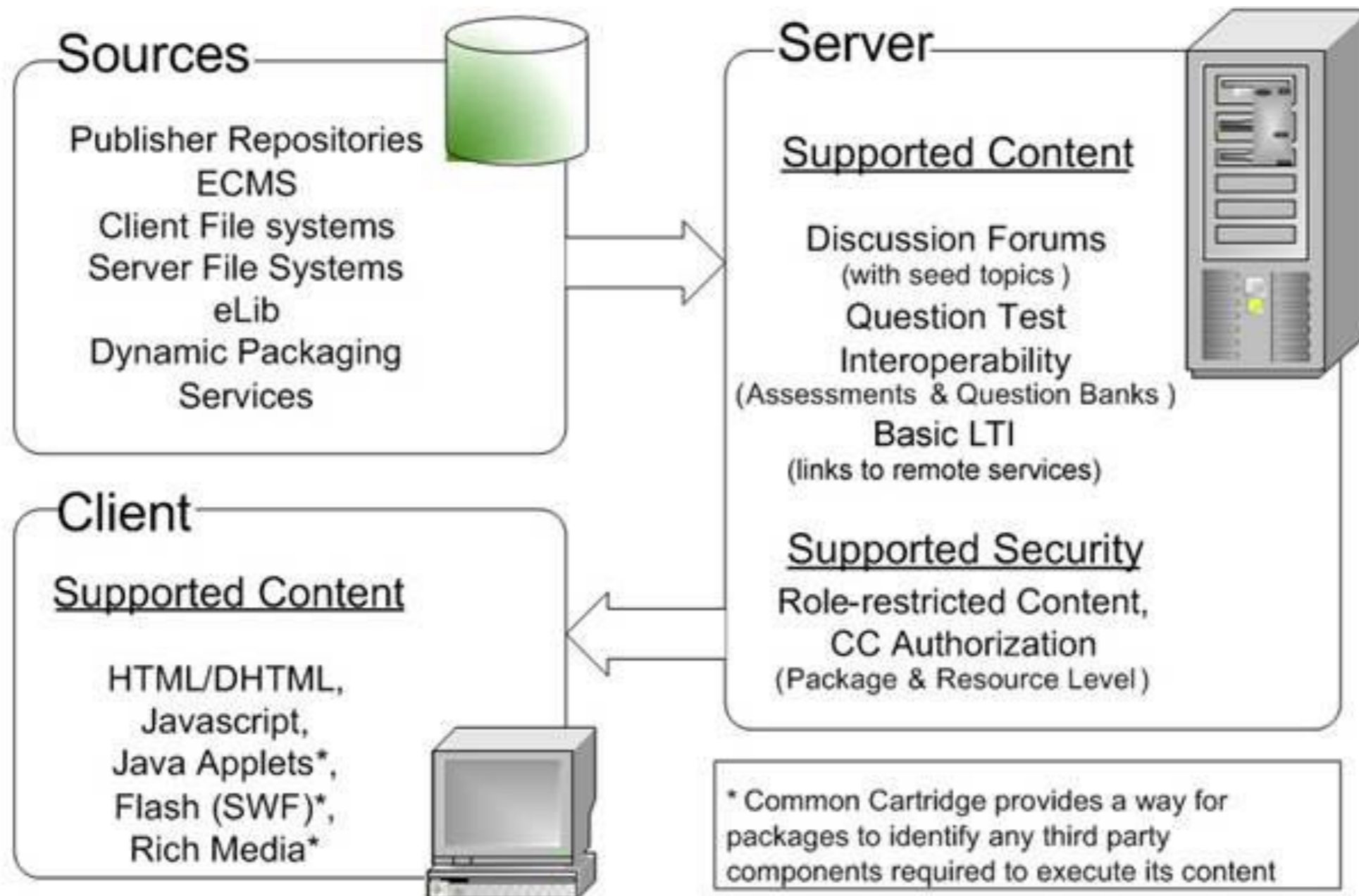
The public release of IMS Global [Caliper Analytics](#)® v1.1 is targeted for May 2017. Caliper is a set of APIs and semantic data vocabularies for enabling widespread, low cost real-time sharing of data to help students, teachers and educational institutions understand progress and improve success. Eighteen leading learning platforms, tools and publisher products have achieved Caliper v1.0 [certification](#). Caliper v1.1 brings a refined and extended vocabulary for describing learning events, including a new, simple profile for capturing tool usage statistics. The specification now provides improved efficiency of over-the-wire transmissions as well as guidance on conformance certification for endpoints receiving Caliper events.

To support the future evolution of Caliper, IMS Global is organizing a new executive Product Steering Committee to facilitate market feedback and guide the market requirements for Caliper going forward. Mike Sharkey of Blackboard, formerly with Blue Canary and University of Phoenix, will be the inaugural chair of the steering committee.

"It is great to see the rapid adoption of Caliper among leading sector suppliers and institutions," said Mike Sharkey, vice president of analytics at Blackboard. "As we continue to see growth in the learning analytics space, the formation of the new IMS Global steering committee will help to focus on key use cases that will accelerate progress for all stakeholders."

Common Cartridge

Common Cartridge



Houston ISD Ecosystem

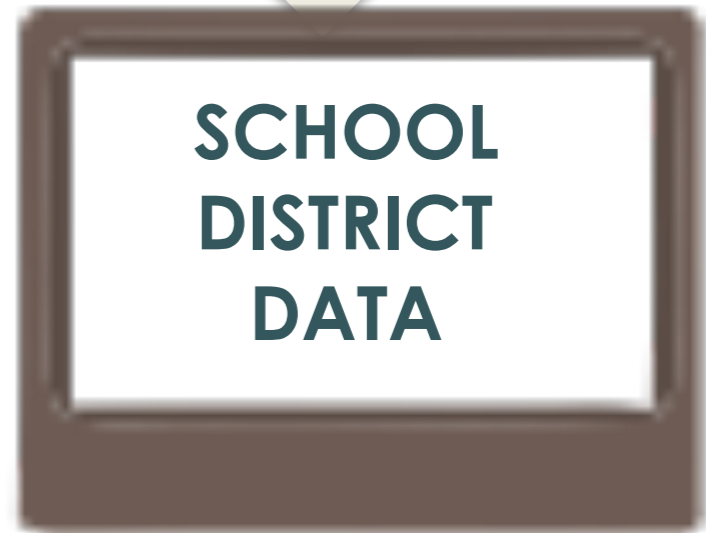
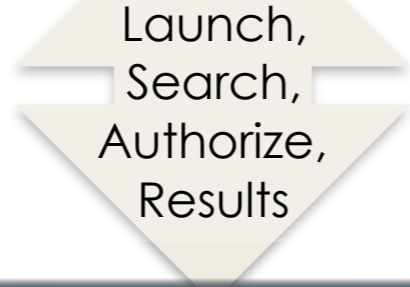


IMS
Open
Standards:

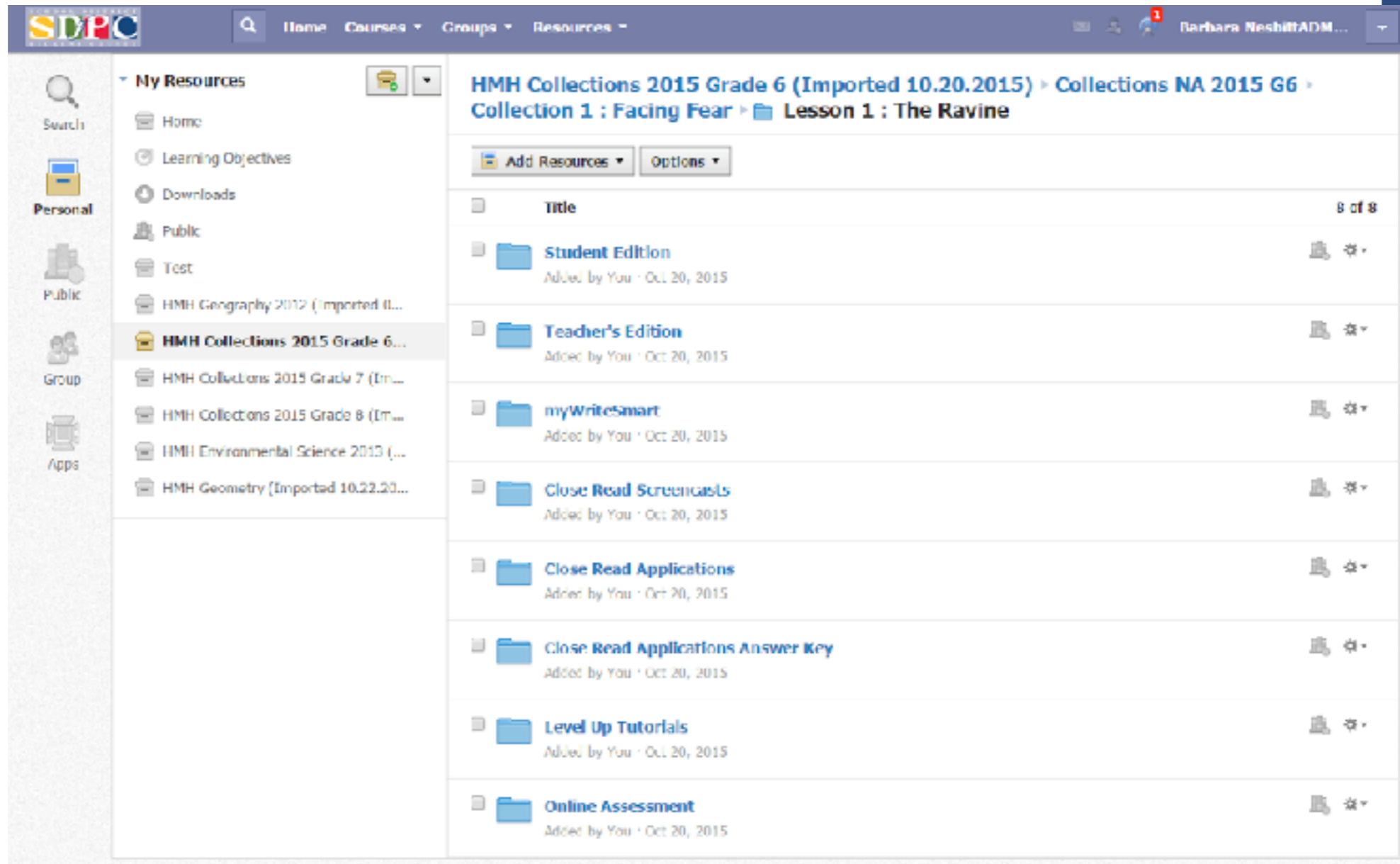
LTI®

Thin Common Cartridge®

OneRoster™



IMS Thin Common Cartridge



The screenshot shows a user interface for an LMS. The top navigation bar includes 'Home', 'Courses', 'Groups', and 'Resources'. The user is logged in as 'Barbara NeshitADM...'. The main content area displays the course path: 'HMH Collections 2015 Grade 6 (Imported 10.20.2015) > Collections NA 2015 G6 > Collection 1 : Facing Fear > Lesson 1 : The Ravine'. Below this, there are 'Add Resources' and 'Options' buttons. A table lists the following resources:

Title	8 of 8
Student Edition Added by You · Oct 20, 2015	
Teacher's Edition Added by You · Oct 20, 2015	
myWritesmart Added by You · Oct 20, 2015	
Close Read Screenshots Added by You · Oct 20, 2015	
Close Read Applications Added by You · Oct 20, 2015	
Close Read Applications Answer Key Added by You · Oct 20, 2015	
Level Up Tutorials Added by You · Oct 20, 2015	
Online Assessment Added by You · Oct 20, 2015	

Interoperability Standard Example