

# IMS Enables a Lifelong Learning Ecosystem

Open Standards  
Forming a Foundation for Opportunity

# Bringing Together Like-Minded Professionals



# With One Goal in Mind



# Leading to Employment





# ...in a Continuum of Lifelong Learning



# Badge Connect™ API - a Secure, Federated Badge Ecosystem


Learner/earner selects a preferred host system for all their badges *no matter where they are earned*

IMS Candidate Final

TABLE OF CONTENTS

1. Introduction
  - 1.1 Design Goals and Rationale
  - 1.2 Use cases
  - 1.3 Conformance and Certification
  - 1.4 Specification Documents
  - 1.5 Terminology
2. API
  - 2.1 Architecture
  - 2.2 Authentication
  - 2.3 Scopes
  - 2.4 Manifest
  - 2.5 Response Envelope
  - 2.6 Assertion Payload
  - 2.7 Endpoints
  - 2.8 Retry Behavior
  - 2.9 Responses
- A. Revision History
  - A.1 Changes
  - A.2 Version History
- B. References
  - B.1 Normative references

**Badge Connect™**  
Open Badges Specification



IMS Candidate Final  
Version 2.1

Date Issued:	January 24, 2020
Status:	This document is for review and adoption by the IMS membership.
This version:	<a href="https://www.imsglobal.org/spec/ob/v2p1/">https://www.imsglobal.org/spec/ob/v2p1/</a>
Latest version:	<a href="https://www.imsglobal.org/spec/ob/latest/">https://www.imsglobal.org/spec/ob/latest/</a>
Errata:	<a href="https://www.imsglobal.org/spec/ob/v2p1/errata/">https://www.imsglobal.org/spec/ob/v2p1/errata/</a>

**IPR and Distribution Notice**

Recipients of this document are requested to submit, with their comments, notification of any relevant patent claims or other intellectual property rights of which they may be aware that might be infringed by any implementation of the specification set forth in this document, and to provide supporting documentation.

IMS takes no position regarding the validity or scope of any intellectual property or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; neither does it represent that it has made any effort to identify any such rights. Information on IMS's procedures with respect to rights in IMS specifications can be found at the IMS Intellectual Property Rights web page:  
[http://www.imsglobal.org/ipr/imsipr\\_policyFinal.pdf](http://www.imsglobal.org/ipr/imsipr_policyFinal.pdf)





## Begin your journey with open badges

- ✓ Share your skills as you earn them.
- ✓ Acknowledge and celebrate talent and growth.
- ✓ Access crowd-sourced and certified development tools.



## DISCOVER THE OPEN BADGES ECOSYSTEM

As an **earner**, you can...

- Choose the open badge and submit your evidence.

As an **issuer**, you can...

- Break learning down into small chunks.

As a **developer**, you can...

- Design verifiable certificates of learning.

- 1. Introduction**
  - 1.1 Status of this Document
  - 1.2 Specification Documents
  - 1.3 Where Can I Get Help?
  - 1.4 Product Directory Listing
  - 1.5 Key Terms and Definitions
- 2. CLR User Stories and Use Cases**
- 3. Relation to Other IMS Specifications**
  - 3.1 CLR and Open Badges
  - 3.2 CLR and CASE
  - 3.3 CLR, QTI and OneRoster
- 4. CLR Architecture**
- 5. Best Practices**
  - 5.1 Use of JSON-LD
  - 5.2 Security
  - 5.3 REST-based Exchanges
  - 5.4 Verification of CLRs
    - 5.4.1 Verification Process
    - 5.4.2 Signed Assertion Verification
    - 5.4.3 Hosted Assertion Verification
    - 5.4.4 Endorsement Verification
    - 5.4.5 Optional Data Validation
  - 5.5 Rendering CLR as Structured Data HTML Documents
- 6. About this Document**

# Comprehensive Learner Record

## IMS Candidate Final

### Version 1.0

Date Issued:	August 26, 2019
Status:	This document is for review and adoption by the IMS membership.
This version:	<a href="https://www.imsglobal.org/spec/clar/v1p0/">https://www.imsglobal.org/spec/clar/v1p0/</a>

### IPR and Distribution Notices

Recipients of this document are requested to submit, with their comments, notification of any relevant patent claims or other intellectual property rights of which they may be aware that might be infringed by any implementation of the specification set forth in this document, and to provide supporting documentation.

IMS takes no position regarding the validity or scope of any intellectual property or other rights that might be claimed to pertain to the implementation or use of the technology described in this document or the extent to which any license under such rights might or might not be available; neither does it represent that it has made any effort to identify any such rights. Information on IMS's procedures with respect to rights in IMS specifications can be found at the IMS Intellectual Property Rights web page: [http://www.imsglobal.org/ipr/imsipr\\_policyFinal.pdf](http://www.imsglobal.org/ipr/imsipr_policyFinal.pdf).

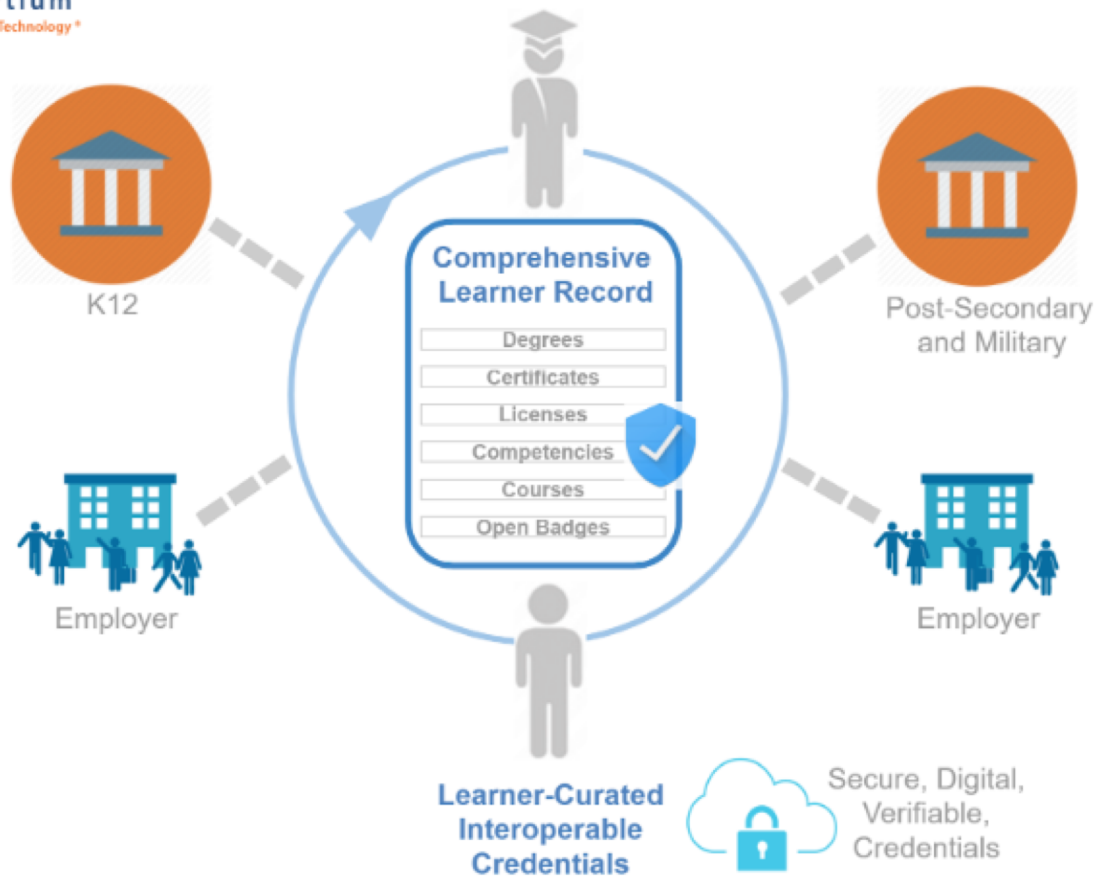
Copyright © 2019 IMS Global Learning Consortium. All Rights Reserved.

Use of this specification to develop products or services is governed by the license with IMS found on the IMS website: <http://www.imsglobal.org/spec/license.html>.

Permission is granted to all parties to use excerpts from this document as needed in producing requests for proposals.

The limited permissions granted above are perpetual and will not be revoked by IMS or its successors or assigns.

THIS SPECIFICATION IS BEING OFFERED WITHOUT ANY WARRANTY WHATSOEVER, AND IN PARTICULAR, ANY WARRANTY OF NONINFRINGEMENT IS EXPRESSLY DISCLAIMED. ANY USE OF THIS SPECIFICATION SHALL BE MADE ENTIRELY AT THE



# Member and Community Resources

## Comprehensive Learner Record (CLR)

### Consumer

Consumer reference implementation.

### Provider

Provider reference implementation.

### Authorization Server

Authorization Server reference implementation of the OAuth 2 dynamic registration endpoint.

### Wallet

Demonstration consumer application.

## Open Badges

### Client

Badge Connect Client (consumer) reference implementation.

### Host

Badge Connect Host (provider) reference implementation.

### Authorization Server

Authorization Server reference implementation of the OAuth 2 dynamic registration endpoint.

# CLR Builder/Editor App - Build Your Own CLR...Now!

1. Create two or three profiles: one learner, one publisher, and one issuer if different than publisher.
2. Create at least one achievement.
3. Create at least one assertion of an achievement.
4. Create at least one CLR using the profiles and assertions you created.

You can also import a CLR JSON file and download a CLR to examine the JSON.

<h3>Profiles</h3> <table border="1"><tr><td>Andy</td></tr><tr><td>Atlas University</td></tr><tr><td>PMC</td></tr></table> <p>Manage</p>	Andy	Atlas University	PMC	<h3>Achievements</h3> <table border="1"><tr><td>Objective 1 <i>Issuer: Andy</i></td></tr><tr><td>Test A <i>Issuer: Atlas University</i></td></tr></table> <p>Manage</p>	Objective 1 <i>Issuer: Andy</i>	Test A <i>Issuer: Atlas University</i>	<h3>Assertions</h3> <table border="1"><tr><td>Objective 1 <i>Recipient: theafmiller...</i></td></tr><tr><td>Test A <i>Recipient: theafmiller...</i></td></tr></table> <p>Manage</p>	Objective 1 <i>Recipient: theafmiller...</i>	Test A <i>Recipient: theafmiller...</i>	<h3>CLRs</h3> <table border="1"><tr><td>Publisher: Atlas Univer... Learner: Andy</td></tr></table> <p>Manage</p>	Publisher: Atlas Univer... Learner: Andy
Andy											
Atlas University											
PMC											
Objective 1 <i>Issuer: Andy</i>											
Test A <i>Issuer: Atlas University</i>											
Objective 1 <i>Recipient: theafmiller...</i>											
Test A <i>Recipient: theafmiller...</i>											
Publisher: Atlas Univer... Learner: Andy											
<h3>Total Alignments</h3> <p><b>1</b></p> <p>Manage</p>	<h3>Total Associations</h3> <p><b>1</b></p> <p>Manage</p>	<h3>Total Endorsements</h3> <p><b>3</b></p> <p>Manage</p>									



# CLR Wallet App Proof of Concept

## Dashboard Demo [Click](#)

Get your Comprehensive Learner Records from multiple sources. Share them with people.

### CLRs

Atlas University - 6/12/18	57
Project Management Consortium - 6/19/18	1
Intel Corporation - 6/17/19	1

### Curated Collections

Product Management CV - 8/7/19	60
Project Management CV - 8/7/19	58

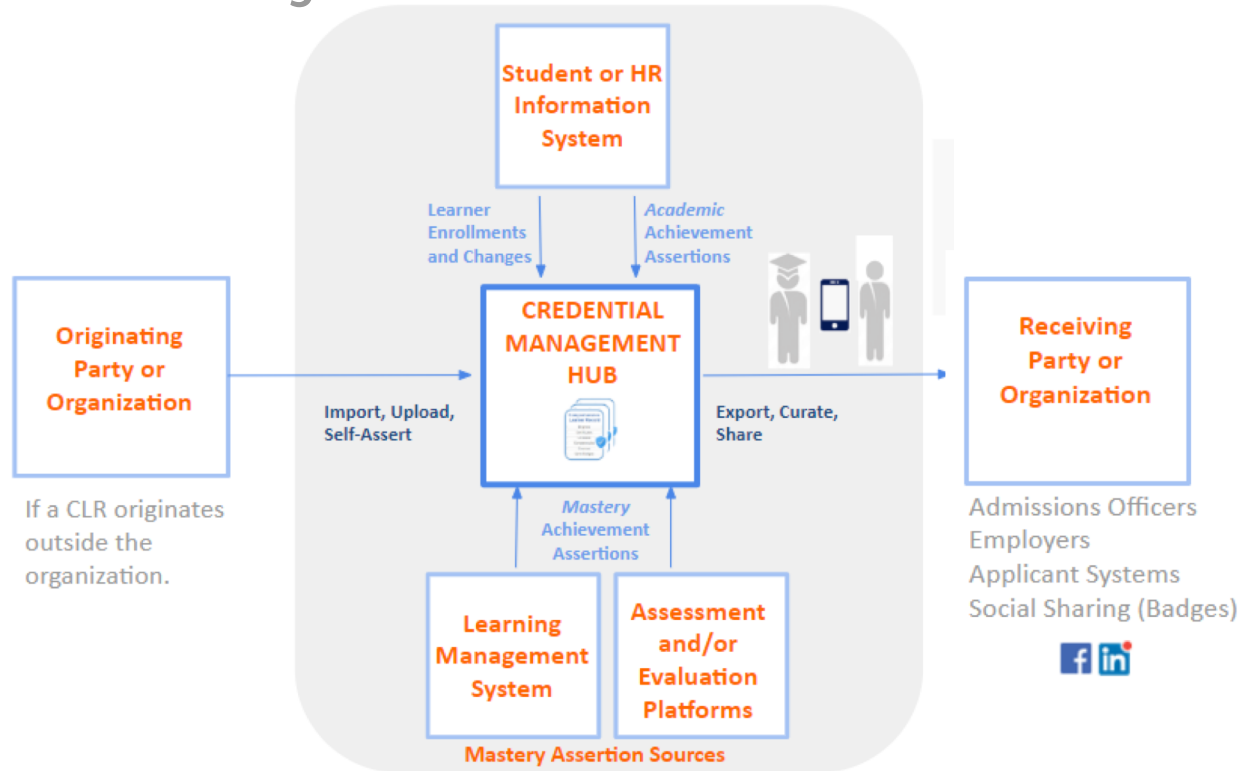
[Manage your CLRs](#)

### Shareable Links

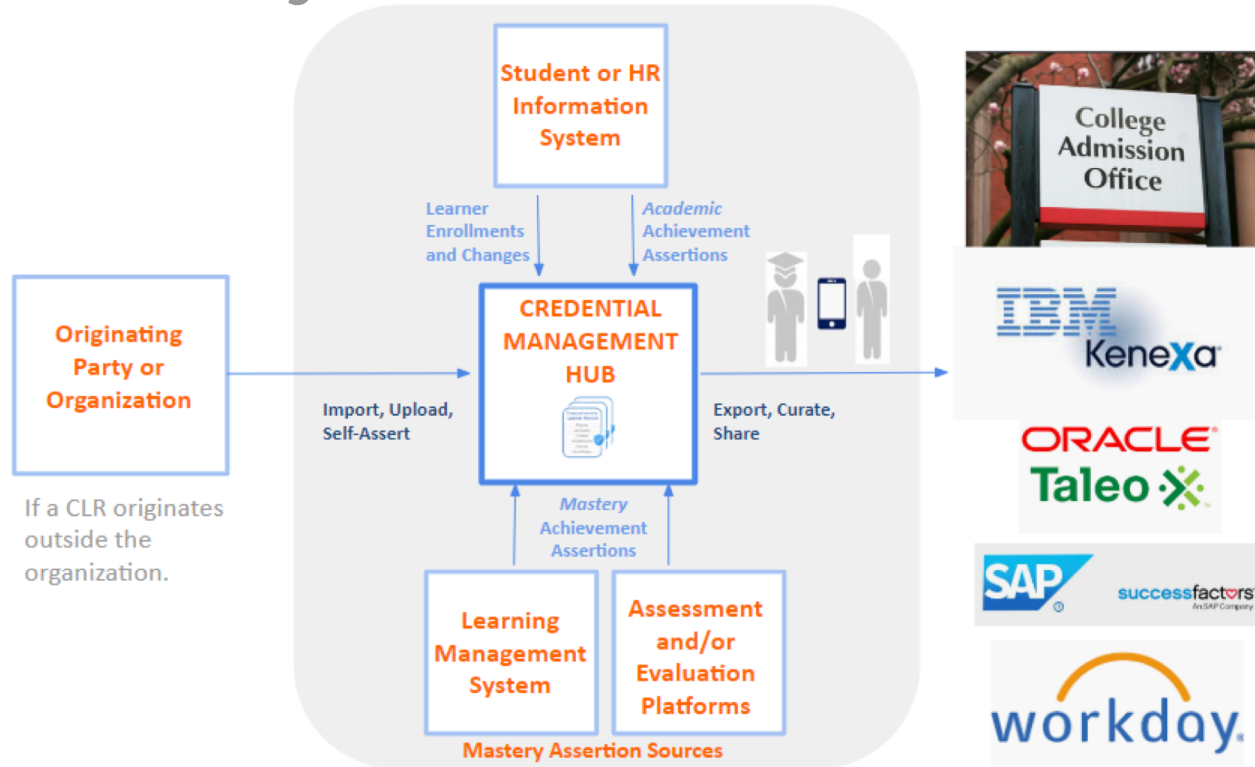
Product Management CV	75
Project Management CV	15

[Manage your links](#)

# Organization's CLR Workflow



# Organization's CLR Workflow



## 2020 - A Year for CLR Implementations

- AEFIS
- Paradigm
- Indiana University
- Broward County Schools  
/Professional Consulting Group
- University of Maryland  
Baltimore County (UMBC)
- Johns Hopkins University
- Core Learning Exchange
- Campus Labs
- Idaho Digital Learning Alliance
- eLumen

## Expansion of Partnerships and Collaboration

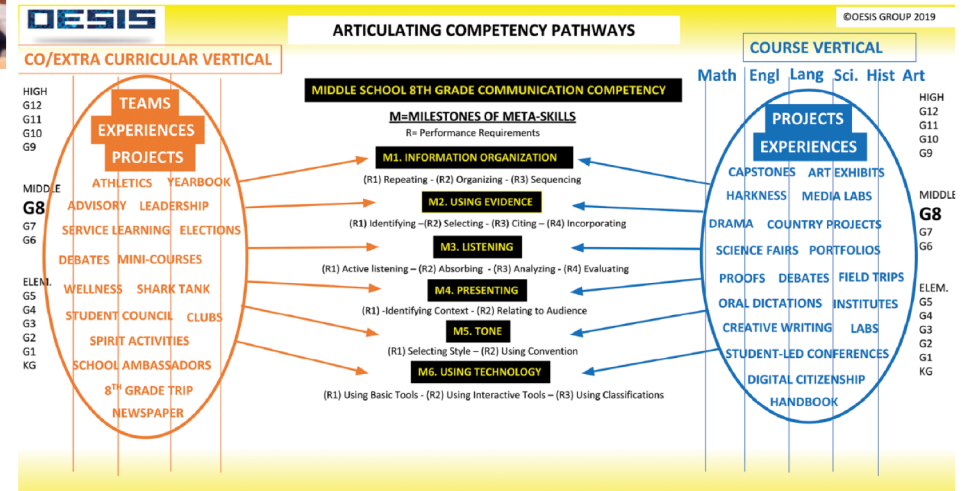


<https://www.imsglobal.org/collaborations.html>



# Projects

**Advancing Next Generation K-12 Digital Transcripts**  
**Partnership for Interoperable Versatile Open Transcripts**





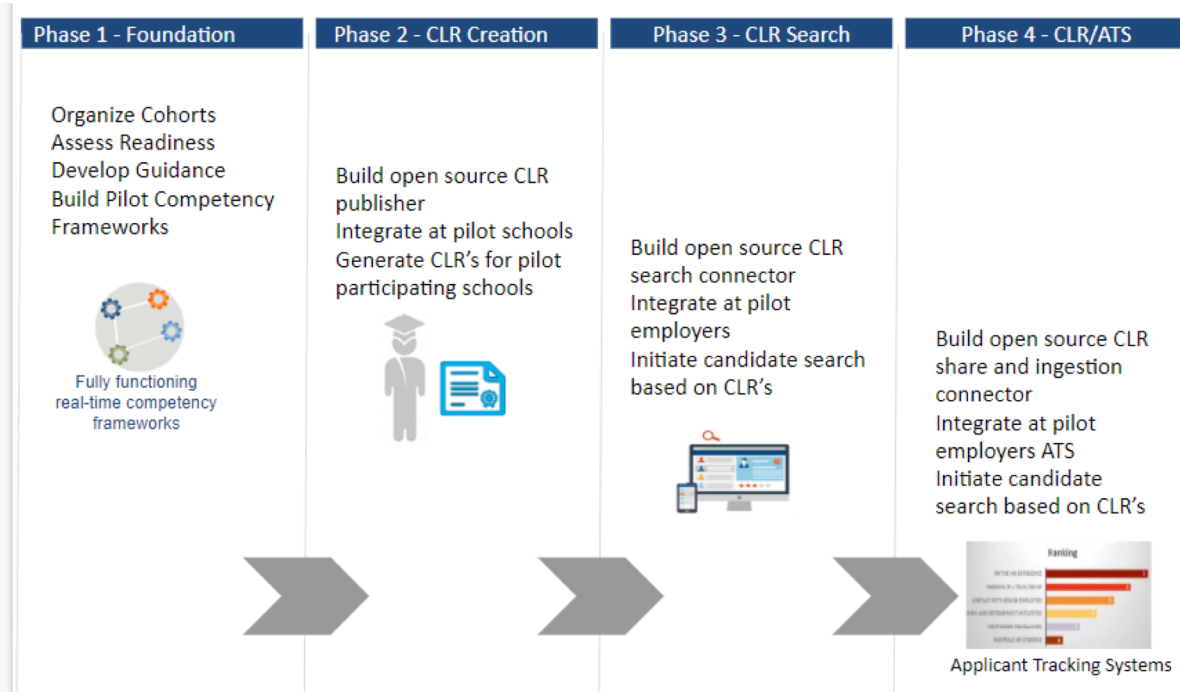
## The Talent Continuum

Open Standards for Opportunity

[www.imsglobal.org/talent](http://www.imsglobal.org/talent)



# Wellspring



## Target ATS Providers

