CREDENTIAL TRANSPARENCY & INTEROPERABILITY

H-1B Rural Healthcare Grant Program

September 2020

Please Note

- To view additional information in talking points, click on the comment icon where it appears.

PROGRAM REQUIREMENTS

H-1B Rural Healthcare Grant Program

FOA-ETA-20-12

Requirement

- Page 14 states:

The Department wishes to ensure that individuals, employers, educators and training providers have access to the most complete, current and beneficial information about providers, programs credentials and competencies supported with these public, federal funds. To this end, the Department requires that information about all credentials (including but not limited to diplomas, badges, certificates, certifications, apprenticeships, licenses, and degrees of all levels and types) and competencies (knowledge, skills and abilities) developed or delivered through the use of these public federal funds be made publicly accessible through the use of linked open data formats that support full transparency and interoperability, such as through the use of credential transparency description language specifications. ETA will provide specific guidance and technical assistance on data elements to include in the published open data, such as information about the credential provider, the credential and its associated competencies, delivery mode, geographic coverage, the industry sector(s) and occupation(s) for which the credential was developed, related assessments, related accreditations or other quality assurances where appropriate, costs, and available outcomes.

Workplans and budgets in the proposal should address how this requirement will be met.
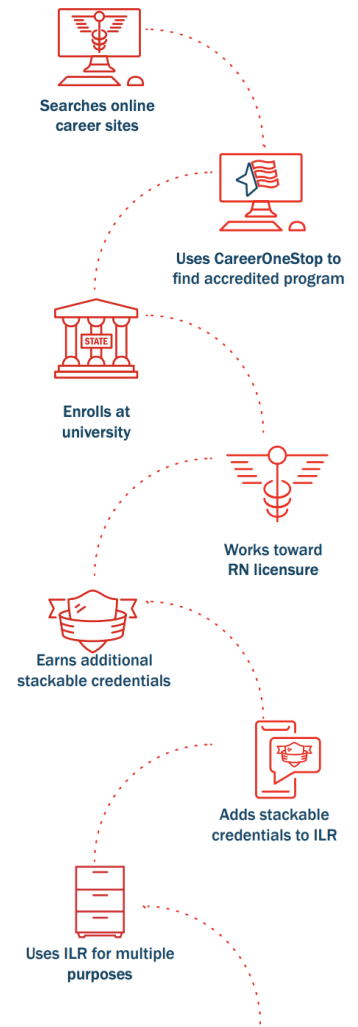
CREDENTIAL INTEROPERABILITY

Transparency and Interoperability of Credentials and Competencies

Lifelong Learning and Employment

Image by mohamed Hassan from Pixabay

Searches online career sites

Uses CareerOneStop to find accredited program

Enrolls at university

Works toward RN licensure

Earns additional stackable credentials

Adds stackable credentials to ILR

Uses ILR for multiple purposes

Lifelong Learning and Employment

Image by mohamed Hassan from Pixabay

Shares selected records on professional networking sites

Impresses hiring leader during her interview

Lands the job at the hospital

Leader develops promotion pathway

Registrar issues digital academic credential

Transfers to leadership position

Hospital provides verifiable info about on-the-job skills

Controls her future career advancement with ILR

Lifelong Data Silos

	HIGH SCHOOL	FIRST JOB: RETAIL	STATE COLLEGE	SECOND JOB: NURSES ASSISTANT	UNEMPLOYED: WORKFORCE	BOOTCAMP	THIRD JOB: MANAGER
DATA COLLECTED	Grades, Attendance, Assessments, Diploma	Employment & Wage Record, Resume	Student Transcript	Employment & Wage Record Skills & Competencies	State UI Case Management System	Student Record	Employment & Wage Record Skills & Competencies
WHERE IS IT STORED	Student Information System (SIS)	HRIS System Payroll System Online Profile	Student Information System (SIS)	HRIS System Payroll System Online Profile	State UI Database & Workforce Case Management System	SIS System Online Profile	HRIS System Payroll System Online Profile
WHO HAS CONTROL	School District	Employer	Institution of Higher Education	Employer	State Agency & Local Workforce Agency	Training Program	Employer
WHO HAS ACCESS	Parents, Foundations, Programs, Researchers	Future Employers Creditors	Student, Foundations, Programs, Researchers	Employee, Future Employers Creditors	State Programs, Training Programs, Researchers	(Parents) State Agencies, Foundations, Researchers	Employee, Future Employers Creditors

Credential Ecosystem

738,438 Unique Credentials Offered

➔ *370,020 by postsecondary institutions*
➔ *7,132 by MOOC providers*
➔ *315,067 by non-academic organizations*
➔ *46,209 by secondary schools*

Source:
Counting US Postsecondary and Secondary Credentials
https://credentialengine.org/wp-content/uploads/2019/09/Counting-US-Postsecondary-and-Secondary-Credentials_190925_FINAL.pdf

Society of Human Resource Management's 2016 Human Capital Benchmarking Survey https://www.shrm.org/about-shrm/press-room/press-releases/Pages/Human-Capital-Benchmarking-Report.aspx

AVERAGE TIME & COST PER HIRE

42 days

$4,129

INTEROPERABLE LEARNING RECORDS

EMPLOYERS

Consume to hire, reskill, or upskill employees

Issue credentials to employees

Use to **verify** credentials and skills

LEARNERS

Upskill and Learn More

Enroll and Learn

Share Achievements

Collect Digital Evidence of Learning

Match Achievements to Job Skills

Search and Compare Credentials to Job Reqs

Get a Job

Achieve Learning Outcomes

EDUCATION & TRAINING PROVIDERS
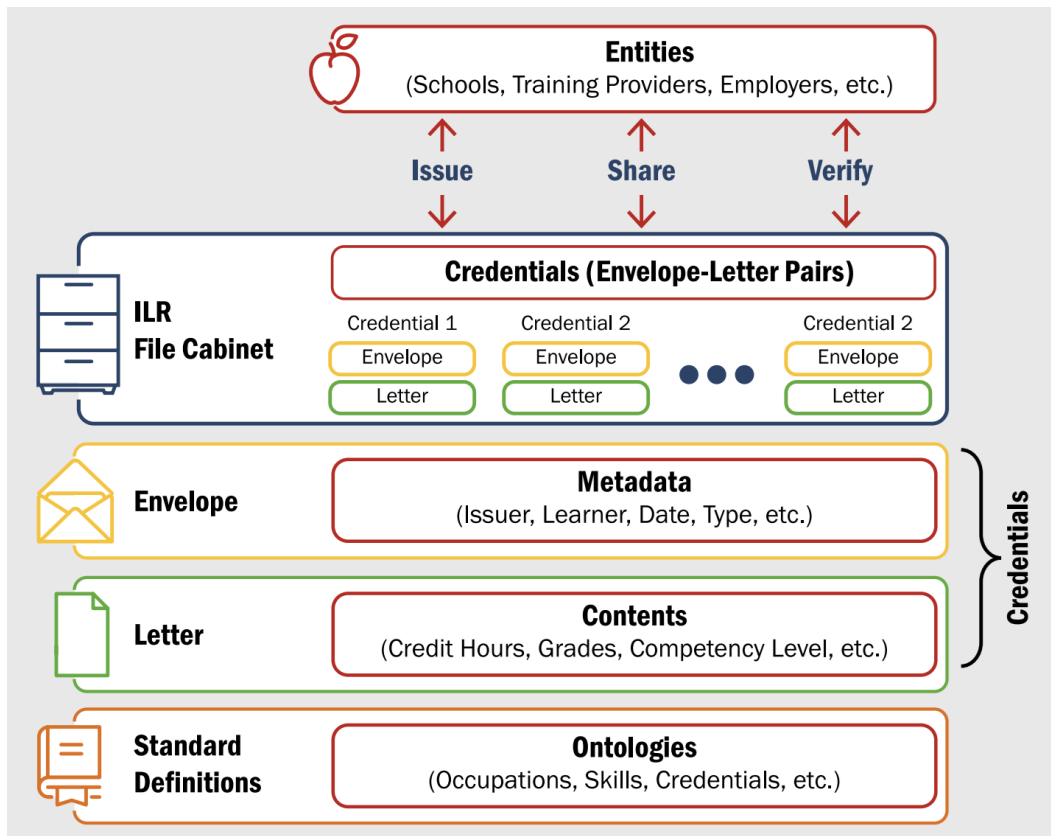
Consume to enroll students

Issue credentials to learners

Use to **verify** credentials and skills

Occupation, job, and skill descriptions

Credential and skill descriptions

What makes a credential interoperable?

Program Requirement

Any credentials developed through this program must be publicly accessible through the use of linked open data formats that support full transparency and interoperability, such as through the use of the credential transparency description language specifications.

Concepts

- ❏ Publicly Accessible
- ❏ Linked Open Data Format
- ❏ Transparent
- ❏ Interoperable
- ❏ Credential Transparency Description Language (CTDL)

Publicly Accessible

Accessible: Open data are made available in convenient, modifiable, and open formats that can be retrieved, downloaded, indexed, and searched. Formats should be machine-readable (i.e., data are reasonably structured to allow automated processing). Open data structures do not discriminate against any person or group of persons and should be made available to the widest range of users for the widest range of purposes, often by providing the data in multiple formats for consumption. To the extent permitted by law, these formats should be non-proprietary, publicly available, and no restrictions should be placed upon their use."

Reference: https://policy.cio.gov/open-data/

Linked Open Data Format

Structured data is machine-readable and used by search engines to understand the content of web pages.

Linked Data is a type of structured data that links between systems via the Web. When data is both structured and linked, it becomes a powerful tool that search engines and other systems can leverage.

Linked Data is at the foundation of the Semantic Web, which is all about: (a) making meaningful links between data points understandable to humans and machines alike; and (b) providing the means for inferring new data from existing data.

Reference: https://policy.cio.gov/open-data/

Linked Open Data Format

Open Data is data that is both (1) Technically open: available in a machine-readable standard format, which means it can be retrieved and meaningfully processed by a computer application; and (2) Legally open: explicitly licensed in a way that permits commercial and non-commercial use and re-use without restrictions.

License Examples:
- Open Data Commons Open Database License (ODbL)
- Open Data Commons Attribution License
- Open Data Commons Public Domain Dedication and License (PDDL)

Linked Open Data Format

Data Format Examples:

- JSON-LD (https://www.w3.org/TR/json-ld11/)

- Microdata (https://www.w3.org/TR/microdata/)

- RDFa (https://www.w3.org/TR/rdfa-primer/)

Resource:
https://developers.google.com/search/docs/guides/intro-structured-data

Transparent

Clearly defined, enables comparison, and is based on shared open standards, common language/descriptions, and skills ontologies/frameworks. Provides contextual information for determining relevance and skills mastered.

Resource:
https://www.commerce.gov/sites/default/files/2019-09/ILR_White_Paper_FINAL_EBOOK.pdf

Interoperable

Uses open standards and common ontologies/frameworks to enable data to be machine readable, exchangeable, and actionable across technology systems and, when appropriate, on the Web. Supports combinations of data from multiple sources. Enables human interoperability and can be understood by people in different occupations and industries from diverse backgrounds.

Resource:
https://www.commerce.gov/sites/default/files/2019-09/ILR_White_Paper_FINAL_EBOOK.pdf

# Credential Transparency Description Language (CTDL)

The Credential Engine's Credential Transparency Description Language (CTDL) is a set of terms and a logical grammar for using them, that is, a "schema" used to describe information regarding Credentials, Competency Frameworks, and Quality Assurance.

The CTDL is structured using RDF principles, allowing diverse systems to communicate about Credentials even if those systems use different schemas internally.

CTDL Linked Open Data Example

Santa Rosa College offers a Certificate in Dental Assisting that requires completion of their Applied Dental Science program and requires specific competencies and is accredited by the American Dental Association.
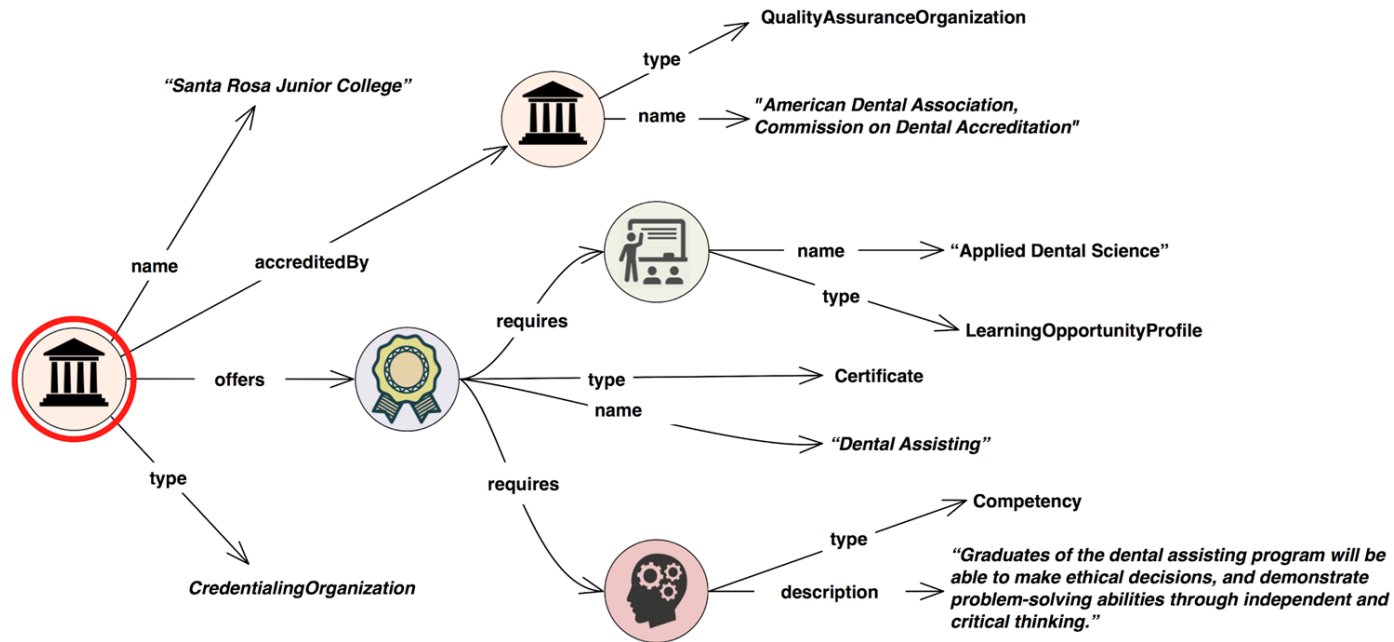
CTDL Linked Open Data Example

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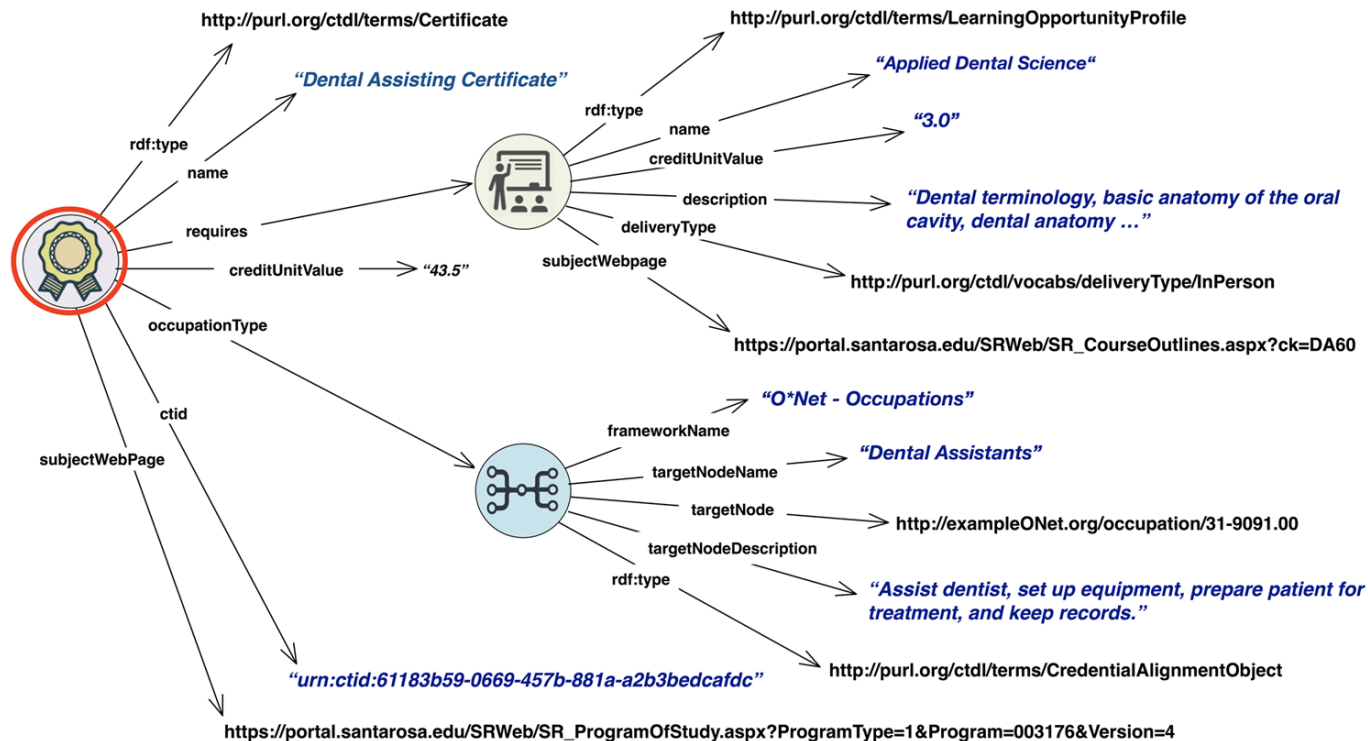
Example Data Elements

- ❏ Industry Sector

- ❏ Occupation

- ❏ Entities Developing Credentials

- ❏ Competencies/Skills Included

- ❏ Assessment

- ❏ Quality Assurance of the Credential

Example - CNAA from Credentialfinder.org

Example - CNAA from Credentialfinder.org

1 | Requires 1 Assessment

Assessments

Certified Medical Administrative Assistant (CMAA)

National Healthcareer Association (NHA)
About the Test: Testing will take place at your school or at a PSI Testing Center near you. You must present valid identification. Test must be completed in one continuous session. CMAA Certification Exam Details: 110 questions, 20 pretest items Exam time: 2 hours, 10 minutes

Conditions

Description:
Certification Eligibility
To be eligible to sit for an NHA exam (other than the ExCPT Pharmacy Technician) and receive certification, each candidate must satisfy Steps 1-3 below:
Step 1: Possess a high school diploma or the equivalent, such as a General Education Development (GED) test or other equivalency test recognized by the candidate's state of residency, or diploma and official transcript reflecting equivalent education as evaluated by the American Association of Collegiate Registrars and Admissions Officers for secondary education (if documents are not in English, a translation into English from a translation service approved in the United States for legal or governmental documents must be available upon request).
Step 2: Successfully complete one of the following pathways:
PATHWAY 1: TRAINING PROGRAM: Within the past five (5) years*:
a. Successfully complete, a training program in the health field covered by the NHA certification exam offered by an accredited or state-recognized institution or provider; or

b.Successfully complete, an apprenticeship program that is registered pursuant to the guidelines of the U.S. Department of Labor; orc.Successfully complete, formal medical services training offered by any branch of theU.S. Military Training; ord.(Pre-Externship Route) Successfully complete the didactic (coursework) portion ofthe program as verified by the institution and prior to the completion of any required externship, provided:•The institution has completed the agreement with NHA to allow students to take the exam after completion of the coursework and prior to completion of the institution's required externship.•Candidates who take the exam prior to their externship will be informed whether he/she passed or failed the exam; however, for all passed exams, no certificate number will be assigned, and the certificate will not be availableto the candidate, an employer or any regulatory or state agency until the externship completion has been received by NHA.•The candidate will have ninety (90) days from the exam date to (i) complete the externship, (ii) ensure that his/her institution has all of the necessary paperwork needed for completion of the institution's program and (iii) have the institution notify NHA.•Once the candidate completes his/her externship, the institution will notify NHA that the candidate has successfully completed the entire training program. Provided the candidate passed the exam, NHA will then assign a certificate number and the candidate will receive an official certificate and wallet card within approximately 7 to 10 business days from the date NHA releases the certificate. The Effective Date of the Certificate will be the date NHA assigns the certificate number. At that time, an employer or regulatory agency will be able to confirm that the candidate is certified with NHA.•If the candidate does not timely complete his/her externship or the institution fails to notify NHA that the candidate has completed his/her externship within 90 days from the date he/she passed the certification exam, NHA will void the exam score and the candidate will be required to retake the exam in order to be certified.e.Candidates whose date of completion from their training program is five years or more prior to the date of registration are ineligible to meet the requirements of Pathway 1. Accordingly, such candidates must instead have the relevant work experience described under Pathway 2 below.PATHWAY 2: WORK EXPERIENCE - Have at least one (1) year of supervised work experience in the health field covered by the NHA certification exam within the last three (3) years.
Step 3: If certifying as a Phlebotomy Technician or an EKG Technician, such Candidates must also complete the Additional Program-specific Eligibility Requirements, described below, prior to sitting for the exam.

Additional Program-specific Eligibility Requirements
•Phlebotomy Technician Certification (CPT): Each candidate for the CPT certification must beable to provide evidence that he/she has successfully performed a minimumof thirty (30) venipunctures and ten (10) capillary sticks on live individuals.
•EKG Technician Certification (CET): Each candidate for the CET certification must be able toprovide evidence that he/she has successfully performed a minimum of ten (10)EKGs on live individuals.
Audience Level
Secondary School or Equivalent

Example - CNAA from Credentialfinder.org

203   **Assesses 203 Competencies**

✓ Check on callers with extended hold times.

✓ D. Create correspondences
   ✓ Knowledge of templates
   ✓ Knowledge of word processing
   ✓ Knowledge of different types of letters
   ✓ Knowledge of different types of correspondences
   ✓ Create letters.
   ✓ Use proper greetings and salutations.
   ✓ Apply proper postage.
   ✓ Obtain required signatures (e.g., who should sign the correspondence?).

✓ E. Demonstrate basic computer skills
   ✓ Knowledge of e-mail system (e.g., Microsoft Outlook)
   ✓ Knowledge of word processing (e.g., Microsoft Word)
   ✓ Knowledge of spreadsheets (e.g., Microsoft Excel)
   ✓ Knowledge of internet (e.g., social media, web searching)
   ✓ Use of hardware (e.g., copiers, fax machines, scanners)
   ✓ Basic HIPAA regulations for the use of the computer
   ✓ Skills at computer software

✓ 7. Basic Medical Terminology
   ✓ A. Use medical terminology to communicate with patients and physicians
      ✓ Basic knowledge of pronunciation
      ✓ Basic knowledge of spelling
      ✓ Basic knowledge of the meaning of terms

   ✓ B. Recognize abbreviations and acronyms used to complete administrative duties
      ✓ Identify the meaning of abbreviations and acronyms (e.g., HX, Pt, H&P, Dx, SOAP, HIPAA, CC, Rx, PHI, CDC, AMA, HMO, PPO).
      ✓ Use of abbreviations and acronyms to complete basic administrative duties

   ✓ C. Use word parts (i.e., prefixes, roots, suffixes) to define medical terminology
      ✓ Basic knowledge of prefixes (e.g., a-, an-, pre-, post-, hyper-, hypo-, peri-, endo-, exo-)
      ✓ Basic knowledge of roots (e.g., cardi/o, vascul/o, gastr/o, nephr/o, hepat/o)
      ✓ Basic knowledge of suffixes (e.g., -logy, -it is, -osis, -pathy, -ist, -graph)

Example - CNAA from Credentialfinder.org

| 1 | NHA Certified Medical Administrative Assistant (CMAA) | ✕ |

Registry Information

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Resource: View in Registry

Raw Metadata

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NHA Certified Medical Administrative Assistant (CMAA)

Credential

Last Downloaded: Apr 23, 2020 11:30 AM

CTDL Resources

Credential Engine is a non-profit organization that develops and maintains the Credential Transparency Description Language (CTDL) and scales and maintains a web-based Credential Registry that collects, connects, and maintains up-to-date credentialing data

Resources:
- https://credentialengine.org

- https://credentialengine.org/wp-content/uploads/2018/11/Linked_Data_Fact_Sheet.pdf

- https://credreg.net/quickstart/ilwrguide

Credential Engine™

Examples

Formats that support full transparency and interoperability of badges, certifications, micro-credentials, licenses, and others:

❏ W3C Verifiable Credentials Data Model https://www.w3.org/TR/vc-data-model

❏ Open Badge 2.0 Specification
https://www.imsglobal.org/sites/default/files/Badges/OBv2p0Final/index.html

❏ Comprehensive Learner Record Specification
https://www.imsglobal.org/activity/comprehensive-learner-record

Examples

Data on industry sector, credential issuers/verifiers, competencies/skills, assessment

❏ US Department of Labor, Standard Occupational Classification https://www.bls.gov/soc/home.htm

❏ US Department of Labor, O*NET https://www.onetonline.org/

❏ US Department of Labor, Competency Model Clearinghouse, https://www.careeronestop.org/CompetencyModel/

Examples

Data on industry sector, credential issuers/verifiers, competencies/skills, assessment (cont'd)

❏ EMSI Open Skills Library, https://skills.emsidata.com/

❏ HR Open Standards, https://hropenstandards.org/

❏ National Initiative for Cybersecurity Education (NICE), Cybersecurity Workforce Framework, https://www.nist.gov/itl/applied-cybersecurity/nice/nice-cybersecurity-workforce-framework-resource-center

❏ Competencies and Academic Exchange (CASE) Framework, https://casenetwork.imsglobal.org/cfdoc/

RESOURCES

Interoperability and the "Learning and Employment Record"

White Paper on Interoperable Learning Records

AWPAB Data Transparency Working Group

https://www.commerce.gov/sites/default/files/2019-09/ILR_White_Paper_FINAL_EBOOK.pdf
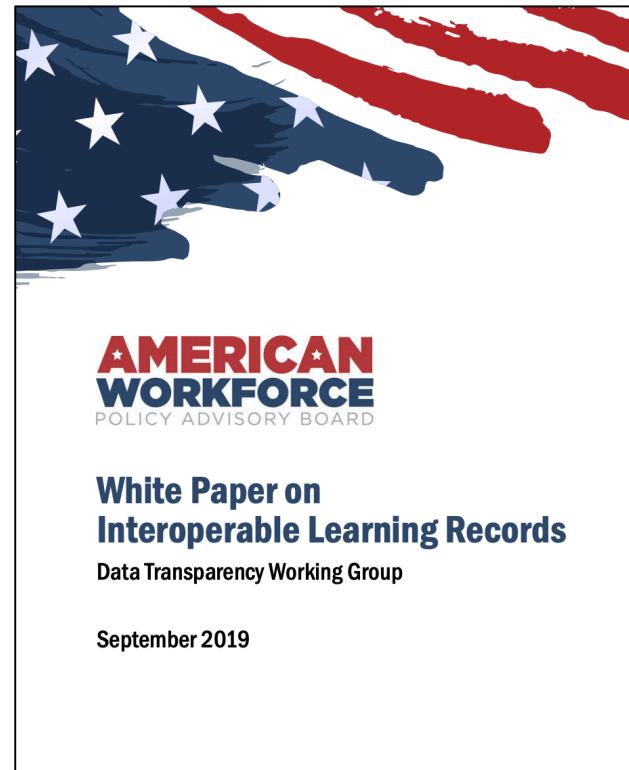

AMERICAN WORKFORCE
POLICY ADVISORY BOARD

White Paper on Interoperable Learning Records

Data Transparency Working Group

September 2019
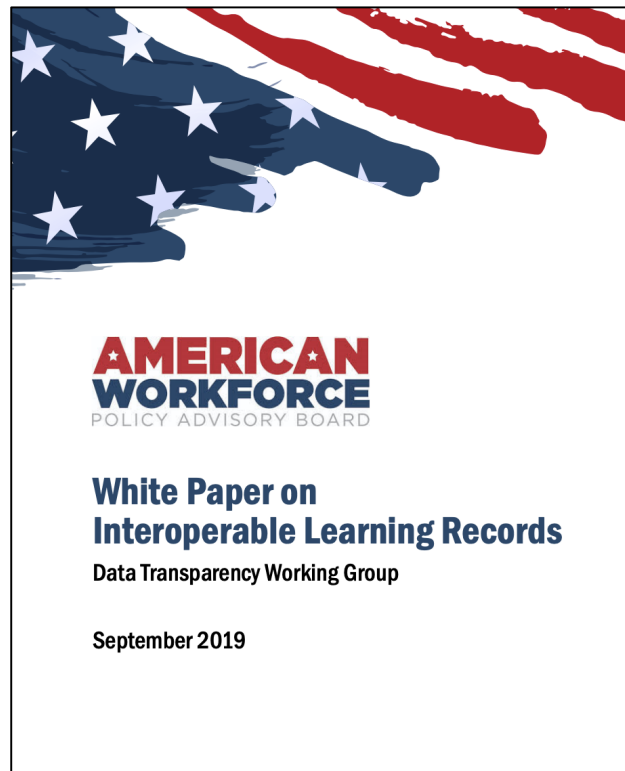
Interoperable Learning Records Landscape Inventory

AWPAB Data Transparency Working Group

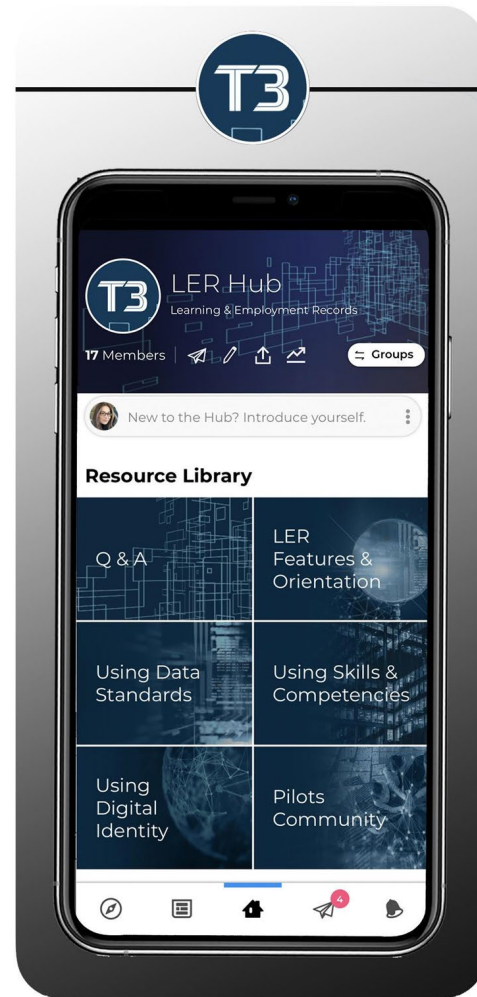❏ https://www.commerce.gov/sites/default/files/2019-12/AWPAB_ILR_Inventory_Nov2019.pdf

T3 Innovation Network

Learning and Employment Record (LER) Hub

https://lerhub.org/

END