

Competency and Credentials User's Group Proposed Definitions

Managed by PESCS

TABLE OF CONTENTS

| | |
|--------------------------------------------------------|-----------|
| About This Document | 3 |
| Introduction | 4 |
| The Problem Space | 4 |
| Proposed Language Context | 5 |
| Foundation | 5 |
| Competencies and Credentials | 5 |
| Core Definitions | 6 |
| Competency | 6 |
| Competency | 6 |
| Competency Definition | 6 |
| Other conversations | 6 |
| Competency Assertion | 7 |
| Other conversations | 7 |
| Credential | 7 |
| Credential | 7 |
| Credential Definition | 7 |
| Other conversations | 8 |
| Credential Award | 8 |
| Other conversations | 8 |
| Supporting Definitions | 9 |
| Experience | 9 |
| Attribute | 9 |
| Assertion | 9 |
| Evidence | 9 |
| Assessments | 10 |
| Qualifying Organizations | 10 |
| Level of Mastery | 10 |
| Credential Type | 10 |
| Reference Source | 10 |
| Interoperability | 10 |
| Harmony | 11 |
| Appendix A: Schemas | 12 |
| Schema.org Domain model for these concepts (from Phil) | 12 |
| Conceptual Model edits from Jim Goodell | 12 |
| Appendix n: Events and Actions in schema.org | 13 |

About This Document

This document is being edited by members of the Talent Signalling Group, PESC, Credential Engine, CEDS, IMS Global, HR Open Standards, T3 Participants and the IEEE CDS Workgroup as an attempt for alignment.

NOTE FROM MICHAEL SESSA: It is imperative that we agree on the definitions of the most basic terms. This is the most difficult part of standardization as 'no single person knows everything' but when we all put our thoughts and ideas forward, we can get there. This means T3, PESC, CE, CEDS, IMS, HROS, IEEE must come to agreement. As much research and work was conducted under Credential Mapping and now under PP1, a guiding principle is to use CEDS as the baseline or spine (unless someone proposes a better one). This document, as it continues to be updated, will also serve as a core document for the CLR Workgroup and will be incorporated into the final approved standard. I would recommend we add 'interoperability', 'harmony',

Introduction

This document is designed to create a written space to represent the “combined wisdom” of all the people who are working on the competency and credentialing space and a place to explicitly deal with the definitions of terms so we can all be talking about the same thing even if we are using differing words. Ideally we would use the same words but that may be asking too much. :-)

The Problem Space

There are three modes of talking about "things":

- the things themselves as an attribute or state of a person or entity; (the food or location).
 - *NOTE: In almost all cases we are not talking about this in practice. We are either talking about the description of the thing or an assertion of an instance of thing liked to a person or org and linked to an event of some kind (see the two things below)*
- descriptions of things - using language to describe these things in a way manageable by systems and people; and, (the menu or the map)
- instances of the thing: associating said things with people via an assertion by a person or organization (the Yelp review or the Passport stamp)

What has made this conversation confusing is that we are also discussing a distinction between two things: what are commonly called competencies and credentials.

What is confusing this conversation even more is that the Comprehensive Learner Record (CLR) teams and many of us working in this space have created a language to try and disambiguate the semantic confusion around "competencies" and "credentials" by creating new terms - "achievement description" and "achievement assertion". This was a smart action but now we have four terms in play all dancing around the same topic/kind of thing.

Proposed Language Context

Foundation

This document assumes that Person, Role, and Organization and their related entities of Time, Events, and Resources are understood and modeled after the Conceptual CEDS model. That is very widely accepted as a paradigm and will allow for us to focus on Competencies and Credentials and their offshoots rather than talking about “basics.”



Competencies and Credentials

We have two KINDS of things: Competencies and Credentials. In order to work with these things we must be able to differentiate and define them.

Phil Barker wrote this as a conversation piece regarding the first of the three definitions:

https://docs.google.com/document/d/1DGjfrXelyAkkQ3qjPBOYI8dpR_muVRMjyLoXge9IZa0/edit?usp=sharing

I have included a link here to a Google Sheet we can use to cross-walk terms between different organizations:

<https://docs.google.com/spreadsheets/d/1JT6IVek8bCV-2DcJnnAmZt5vz5clstN51Q3lTt9Vldw/edit?usp=sharing>

Core Definitions

*NOTE from AMJ: on 9/9/2019: Recommend focusing on the **CEDS Proposed Definitions** at the end of each definition section. We are looking at those as possible recommendations to CEDS and IEEE. There is a conversation on these definitions happening at [page 7 of the CEDS conceptual model doc](#). I will keep this page updated as consensus is reached there.*

| Conceptual Category | (Resource) Definition <i>Information that Might Be Applicable to any Entity</i> | (Event) Assertion <i>Information Attributed to an Entity (person or organization)</i> |
|---------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Competency | Competency <u>Definition</u> | Competency <u>Assertion</u> |
| Credential | Credential <u>Definition</u> | Credential <u>Award</u> |

Competency

Competency

- The thing itself: An attribute or state a person has or may attain that involves Knowledge, Skill, or Aptitude, Attitude, or Habit of Practice (KSAs) of some kind.
- *Ed Note: Some taxonomies and theories talk about “organizational competencies”. This is out of scope for this definition for now.*

Competency Definition

CEDS Proposed Definition: A **Competency Definition** is an information **Resource** that includes a **statement** that describes a skill, knowledge, aptitude, attitude, or habit of practice that can be measured, and other metadata related to that statement.

Other conversations

- Also been called a Competency Description.
- Language and title describing the competency. Also may contain information on where it sits in a taxonomy of such things or relationships between competencies.
- Cred Eng: Description of knowledge, skills, and/or abilities.
<https://credreg.net/ctdlasn/terms#Competency>

Competency Assertion

CEDS Proposed Definition: A **Competency Assertion** is **Event** data that includes Assertion by an **Agent/Issuer** about a Person's competency as of a certain date.

Other conversations

- Phil: in the W3C Verifiable Credentials data model. I think that what it calls (verifiable) credentials are Credential Assertions/Awards, and **that the statements/claims in one may be Competence Assertions.**
- This has been called a Competency Instance as well
- This could be a list of competencies being taught in an instructional context (lesson plan, formative assessment) or being documented in a curricular context (content, textbook, unit objectives, etc.). This can also include those documented in a training environment, self-study guides or directions, and experiential learning curricula. It has been suggested that a report from an LMS with a list of masteries might be a set of competency assertions.
- Cred Eng: "Competency Assertion"

Credential

Credential

In common parlance people will use the word "Credential" and it is synonymous with "Credential Award". We should not fight that and accept these as synonyms and treat them appropriately. In official documentation we should maintain rigor and use "Credential Award".

- This is the abstraction of something that **CAN BE** awarded to a recipient for competencies, experiences and attributes they have. ~~The thing itself.~~
(ED NOTE: I understand you can have credentials for experiences - attended seminar, seat time in a lecture, survived combat, etc. but let's lump that into competency for now as I believe that EXPERIENCE or ATTRIBUTE can be brought in without hurting the model and deal only with "COMPETENCY-based" credentials)
- *Ed Note: This will not be directly represented in the practical standards and vocabularies being developed. The other two definitions will.*

Credential Definition

CEDS Proposed Definition: A **Credential Definition** is an information **Resource** that defines a competency or qualification, achievement, personal or organizational quality, experience, attribute, or aspect of an identity typically used to indicate suitability (source: Credential Engine).

Other conversations

- Also been called an Achievement Description or Definition

- Describes a credential/achievement and some metadata about the credential/achievement. Could include, if relevant, who is "offering" the credential, where it sits in a taxonomy/relationships of credentials, and possibly what competencies it represents. It may contain some constraints like what evidence/assessment is needed to "get" the credential
- *Cred Eng: Qualification, achievement, personal or organizational quality, or aspect of an identity typically used to indicate suitability.* <https://credreg.net/ctdl/terms#Credential>
- IMS CLR (as of 08/2019): "Achievement"
- UNESCO Qualifications:
<https://unevoc.unesco.org/go.php?q=TVETipedia+Glossary+A-Z&filt=all&id=367>
- Schema.org: https://schema.org/docs/search_results.html?q=Credential
- Phil Barker: "Recognition that may be awarded to a person or other entity that meets the requirements defined by the credentialer"

Credential Award

CEDS Proposed Definition: A **Credential Award** is **Event** data that includes an **Assertion** by an **Agent/Issuer** to document a Person or Organization's qualification, achievement, personal or organizational quality, experience, attribute, or aspect of an identity as of a certain date or date range.

Other conversations

- Phil: in the W3C Verifiable Credentials data model. I think that what it calls **(verifiable) credentials are Credential Assertions/Awards**, and that the statements/claims in one may be Competence Assertions.
- Also has been called an Achievement Assertion
- This is a credential linked to a person by an organization or a person (could be the data subject themselves). might be formal ("PhD from MIT in Physics") or much more informal ("I attended *Alex Jackl's Emporium of Amazing Education Data*"). It may also contain the evidence/assessments completed.
- IMS CLR (as of 08/2019): "Assertion"
- <https://credreg.net/ctdl/terms#CredentialAssertion>
- CEDS Definition: "Credential Award"

Supporting Definitions

Experience

Some credentials are asserting an experience such as “experienced combat”, “received a malaria vaccination”, “spent 14 weeks in this class listening to Professor Alex babble on about credential types”. These might still have some evidence (a transcript, a military report, a health record) but it is not a “competency”. It references the person having undergone some experience, or having had something done to them, or participating in some activity.

- Do we need an “Experience Award”

Attribute

Some credentials are about aspects or attributes ABOUT the person not something they “earned” A passport is an example. Or a school id. Or a certificate of being a Native American. In some cases these credentials are actually the evidence of these things and are backed up by a process to get to them or some other evidence (birth records, enrollment record, genetic test)

Assertion

A claim by a trustworthy source (3rd party) expressed in a tangible medium.

- Phil: "statement", an assertion and a verifiable assertion. In the spirit of "anyone can say anything about anything" a statement would be like the RDF triple <phil> <hasCredential> <PhD> which can be self-asserted in any context. I think the trustworthy third party comes with verification which requires more structure around the statements.
- Stuart: . I agree totally that: (1) people make statements about their own competencies; (2) peers make statements about their colleague's competencies; and (3) trustworthy 3rd parties make verifiable and unverifiable statements about some person's competencies. There are values attached at each point along this continuum and to not distinguish among them leads to confusion.
- Ann V.: We can distinguish statements from assertions by looking at the context. I may state that I have a degree in Nursing, and that statement is a yes/no verification. Either I have the degree or not. Assertion relates more to competency than the statement, usually of completion of an academic program. Verifications can be categorized. In the nursing scenario, the low-level verification might be my grandmother, on the top level, it's my licensing board. Taken at the top level, the license is my Credential.
- CEDS Definition:
-

Evidence

- type of assessment?

- Dictionary.com:
 - noun
 - that which tends to prove or disprove something; ground for belief; proof.
 - something that makes plain or clear; an indication or sign:
 - His flushed look was visible evidence of his fever.
 - Law. data presented to a court or jury in proof of the facts in issue and which may include the testimony of witnesses, records, documents, or objects.
- CEDS Definition:

Assessments

- type of evidence?
- Cred Eng: **en-US:** Direct, indirect, formative, and summative evaluation or estimation of the nature, ability, or quality of an entity, performance, or outcome of an action.
<https://credreg.net/ctdl/terms#Assessment>
-

Qualifying Organizations

Also Known As: *Quality Assurance Entity or Certification Authority*

- Organization that is recognized as a reliable source of credentials?
- <https://credreg.net/ctdl/terms#CredentialOrganization>
- <https://credreg.net/ctdl/terms#QACredentialOrganization>

Level of Mastery

- A piece of metadata in a specific area associated with evidence or an assessment?

Credential Type

(credentials, diplomas, micro-credentials, badges, job skills, learning outcomes, etc., etc.)

- Cred Eng has a strong list of Credential Types: <https://credreg.net/page/typeslist>

Reference Source

framework of KSA's already exist (example is NICE Cybersecurity)

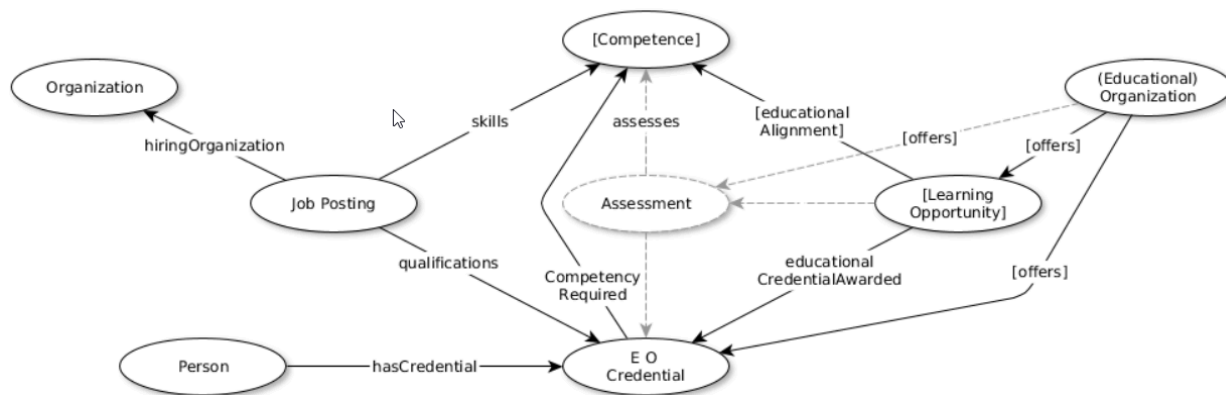
Interoperability

Harmony

Appendix A: Schemas

Schema.org Domain model for these concepts (from Phil)

Talent Signal in schema.org domain sketch

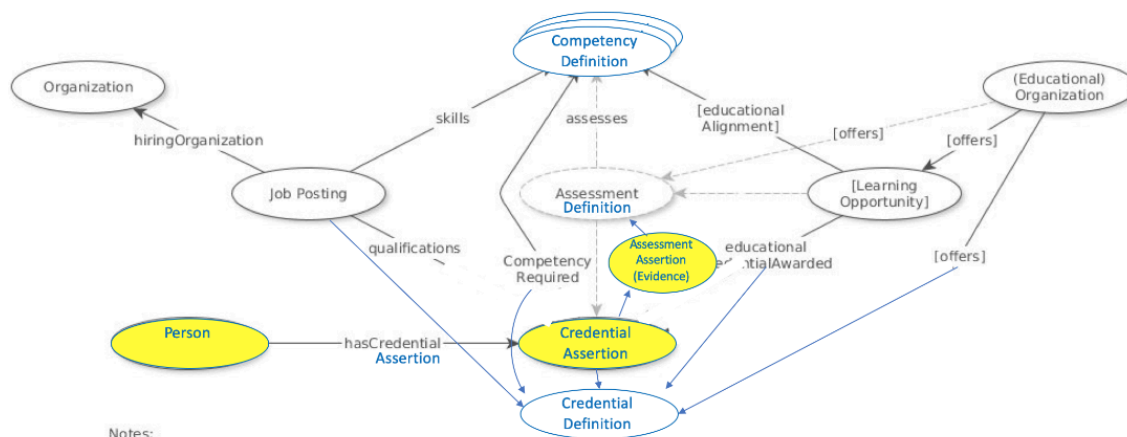


Notes:
 This is a partial domain sketch, not a complete model.
 Many properties and relationships are not shown.
 Properties in [square brackets] are via an intermediate object.
 Items in gray & broken lines are not in schema.org
 *Competences are represented in schema.org with DefinedTerms
 There are several types of learning opportunity in schema.org

Phil Barker
 2109-08-14
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Conceptual Model edits from Jim Goodell

Talent Signal in schema.org domain sketch



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 There are several types of learning opportunity in schema.org

● = Personal info

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Appendix n: Events and Actions in schema.org

Schema.org has two classes that are relevant to the "Event" domain in the CEDS conceptual model: the nominally identical Event and Action. There are also some other classes that are conceptually similar, such as Trip (A trip or journey. An itinerary of visits to one or more places.) that seem beyond the scope of anything discussed in this document.

Event is defined as

An event happening at a certain time and location, such as a concert, lecture, or festival. Ticketing information may be added via the offers property. Repeated events may be structured as separate Event objects.

<https://schema.org/Event>

This definition betrays the e-commerce origin of many of schema.org terms through its examples and mention of tickets. However the base of the definition--something that happens at a certain time and location--shows it has a much wider application. Formal clarification of this is an [open issue](#) but it is common practice for