ARUCC MyCreds™ | MesCertif™
National Network
Microcredentials in Data Systems & Lifelong Learning
ARUCC MyCreds Virtual Skills Passport
Microcredential Project
May 3 2023

Funding for this project is provided by the Government of Ontario.
Presentation and Panel Discussion

Joanne Duklas
President, Duklas Cornerstone Consulting
Co-chair Microcredential Task Force

Alex Jackl
President & CEO, Bardic Systems
Co-chair Microcredential Task Force

Bert van der Geest
Director, Canada

Doug Holmes
Manager, eTranscripts OUAC
Who is Who?

**ARUCC**
The Association of Registrars of the Universities and Colleges of Canada (ARUCC) owns the MyCreds™ National Network.

**Ontario**
The Government of Ontario is funding the Ontario Virtual Skills Passport Pilot Project.

**DIGITARY**
Digitary is providing the IT infrastructure that powers MyCreds™ and technical onboarding support for post-secondary institutions.

**MATTR**
MATTR is providing the decentralized identity and verifiable credential technical infrastructure being used to extend the MyCreds™ solution and supporting the Pilot Project technical standards consultation workstream.

**DCC Inc.**
DCC Inc. is providing ARUCC overall program management support for the sustainable adoption and implementation of the Virtual Skills Passport Initiative and MyCreds™.
ARUCC MyCreds™

- **What is MyCreds™?**
  - 24/7 virtual credential platform & digital exchange highway
  - Incorporated, shared service that is sector owned
  - Regional, national, and international connectivity

- **What does MyCreds™ support?**
  - Inbound admissions; support letters to help learners access funding, student authorizations, and other govt support; transition support to jobs and regulatory bodies
  - Outbound: Transcripts, parchments, letters, badges, micro-credentials, degrees, diplomas, certificates, etc
Ontario Virtual Skills Passport Project for Micro-Credentials

- Contribute to community data open standards consultations and issue digital micro-credentials as Verifiable Credentials

Transcripts | Micro-credentials
------- | -------
Parchments | Awards
Confirmation letters | & more...
Why are data exchange standards needed for Micro-Credentials?

• Micro-Credential use is expanding rapidly in both the private sector and the post-secondary sector
• Learners and employers (verifiers) need to understand and interpret the certification
• Verifiers need to trust in the issuing organization and in the methods for credential exchange
• Increased learner mobility both nationally and internationally
• Learner control and self-sovereignty over their credentials
Categories of Required Standards

- Credential content representation
  - Rich data structures to enable the issuance, common understanding and exchange of data as it relates to the credential
  - Development of a credential standard is a necessary first step to enable internet standards and digital trust through W3C Verifiable Credentials

- Internet Standards and Digital Trust for W3C Verifiable Credentials
  - World Wide Web Consortium (W3C)
    - DIDs, VCs, JSON-LD, Linked Data Proofs, CSS, HTML, XML, SVG, RDF, SOAP, ZCAP-LD, WebAuthn, CHAPI
  - Decentralized Identity Foundation (DIF)
    - DIDComm 2.0, Well Known DID Configuration, Universal Resolver & Register
  - OpenID Foundation (OIDF)
    - OpenID Connect, OpenID Connect Credential Provider
  - Internet Engineering Task Force (IETF)
    - URL, URI, URN, OAuth, JOSE (JWS/JWE/JWT)
Why are we focusing on Credential and Micro-Credential data standards?

| National data interoperability | • Promote learner mobility and efficiencies for institutions  
|                              | • Enable electronic consumption of credential records |
| International data interoperability | • Promote learner mobility and international exchange  
|                              | • Ensure compatibility and interoperability with international initiatives |
| Portability and comparability | • Learner portability and exchange of badges (Open Badges v2.0 compliant)  
|                              | • Learner portability and exchange of micro-credentials for consumption by institutions, employers and other verifiers |
| Expansion of use cases beyond post-secondary | • Enable W3C Verifiable Credentials that are interoperable in learner wallets together with other out-of-network Verifiable Credential sources |
Current Data Standards

- PESC College Transcript
  - Widely used by post-secondary institutions across the country for transcript exchange
- PESC High School Transcript
  - Used in several provinces and states in North America for High School transcript exchange
- PESC Credential and Experiential Learning
  - Developed and used at Stanford University
- Open Badges v2.0
  - Used world-wide for interoperable exchange of badge information
- W3C Verifiable Credentials
  - An open standard for Verifiable Credentials enabling portability and interoperability
Proposed Micro-Credential Data Standard

Influenced by:

- PESC College Transcript
- PESC High School Transcript
- PESC Credential and Experiential Learning
- Open Badges v2.0
- EU and NZ Frameworks
- Institution Input and Feedback

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About CanPESC

• Established 2011

• Open, volunteer PESC user group
  • Members from Canadian PSIs, hubs, government, vendors

• Discuss, promote, coordinate and liaise between PESC and ARUCC

• Ensures PESC’s mission and deliverables, including approved standards, supports and incorporates the needs and interests of Canadian stakeholders

• [https://www.pesc.org/canadian-pesc-user-group-1.html](https://www.pesc.org/canadian-pesc-user-group-1.html)
Approach for obtaining input and feedback

- Consultation with PESC on the PESC Credential and Experiential Learning standard
- Consultation with Stanford University on their original development and use of the PESC Credential and Experiential Learning
- Workshops and presentations to institutions
- Communications through CanPESC at regular monthly meetings
- Presentation at PESC Fall Summit and CanPESC meeting
- Participation in Micro-Credential Forums by eCampus Ontario
- Outreach to experts in Micro-Credentials across the country
- Feedback from Virtual Skills Passport Pilot participants
- Setup of Github and Slack channels for communications
### Proposed data structures

**Student > Person data structure**

- Utilized the same structures from the PESC College Transcript and selected those typically used by institutions across the country

- Identified **required** data elements (in green) needed for the MyCreds Platform and the Verifiable Credential
  - SchoolAssignedPersonID
  - Birthdate
  - FirstName
  - LastName
  - Email

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<th>Student</th>
<th>Person</th>
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Proposed data structures

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**Student > LearningRecord > MicrocredentialAward data structure**

- Modeled structures from the PESC Credential and Experiential Learning and Award structures from PESC College transcript
- Included structures from Open Badges v2.0
- Identified **required** data elements (in green) needed for the MyCreds Platform and the Verifiable Credential
  - AwardID
  - AwardLevel
  - AwardTitle
  - AwardDescription
  - AwardHonours
  - AwardProgram
    - ProgramName
  - AwardDate
  - IssuedDate

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Proposed data structures

Student > LearningRecord > MicrocredentialOrganization data structure

- Modeled structures from the PESC Credential and Experiential Learning and Organization structures from PESC College transcript
- Identified **required** data elements (in green) needed for the MyCreds Platform and the Verifiable Credential
  - IssuingBodyID
  - IssuingBodyName
  - CountryCode
  - URL
Sample XML and rendered Micro-Credential

```xml
<?xml version="1.0" encoding="UTF-8"?>
<Student xs:xs:schemaLocation="https://core.digitary.net/schema/mycreds/vsp/2022/11/01
https://core.digitary.net/schema/mycreds/vsp/2022/11/01"
xmlns:xs="http://www.w3.org/2001/XMLSchema-instance"
xmlns="https://core.digitary.net/schema/mycreds/vsp/2022/11/01">
  <Person>
    <SchoolAssignedPersonID>N00000001</SchoolAssignedPersonID>
    <Name>
      <FirstName>Test</FirstName>
      <LastName>Learner1</LastName>
    </Name>
    <Contacts>
      <Email>N00000001@humber.ca.zzz</Email>
    </Contacts>
  </Person>
  <LearningRecord>
    <MicrocredentialAward>
      <AwardID>EMHL 100</AwardID>
      <AwardLevel>Micro-credential</AwardLevel>
      <AwardTitle>
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      </AwardTitle>
      <ProgramName>Excellence in Mental Health Organization and People Management</ProgramName>
      <AwardProgram>
        <AwardDate>2022-10-12</AwardDate>
        <IssuedDate>2022-12-22</IssuedDate>
      </AwardProgram>
      <IssuingBodyID>CA000098</IssuingBodyID>
      <IssuingBodyName>Humber College</IssuingBodyName>
      <Contacts>
        <Address>
          <CountryCode>CA</CountryCode>
        </Address>
        <URL>https://cpl.humber.ca</URL>
      </Contacts>
    </MicrocredentialOrganization>
  </LearningRecord>
</Student>
```

Humber College Institute of Technology and Advanced Learning in partnership with
SickKids Centre for Community Mental Health Learning,
hereby awards this Micro-credential to

Test Learner1

has successfully completed the requirements of

Excellence in Mental Health Organization and People Management

January 12, 2022

This micro-credential is issued upon the recommendations of

SickKids
Centre for Community
Mental Health
LEARNING INSTITUTE

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Other features included in the proposed data standard

- AwardTitle and/or ProgramName can sometimes be lengthy and institutions like to have these elements display in a certain way
- A DisplayInfo group with an unbound DisplayName element has been introduced to separate how a credential may need to be displayed vs the underlying data itself such where a program name needs to be deliberately split across multiple lines
- This DisplayInfo can be applied to Academic Credentials as well as Micro-Credentials and used for any of the data elements

  - <AwardProgram>
    - <ProgramName>Advanced Manufacturing and Automation Pre-Operator Level 3</ProgramName>
    - <DisplayInfo>
      - <DisplayName>Advanced Manufacturing</DisplayName>
      - <DisplayName>and</DisplayName>
      - <DisplayName>Automation Pre-Operator Level 3</DisplayName>
    </DisplayInfo>
  </AwardProgram>
Areas for further refinement

• Other metadata associated with the Micro-Credential:
  • Learning Outcomes
  • Competencies and Skills
  • Earning Criteria
  • Methods of delivery and assessment
  • Industry Partner endorsement
  • Stackability of courses or badges leading to the credential

• Draft structures have been put into the proposed model, but further refinement is required with institutions that may be interested and planning to capture this associated data
Mapping to EU and NZ frameworks

- Listings of data elements from the EU and NZ frameworks have been provided and mapped in draft to the proposed data structure
- Lack of complete definitions for the data elements make it difficult to know if the draft mapping is accurate
- Further work with our EU and NZ counterparts on the definitions will help to ensure compatibility
Uses for Credential and Micro-Credential Data Standards

• Promote improved understanding and comparability of Micro-Credentials
• Machine-readable consumption of both Academic Credentials and Micro-Credentials
• Enable national and international exchange of both Academic Credentials and Micro-Credentials
• Enable transformation into W3C Verifiable Credentials as we are demonstrating through the Virtual Skills Passport project
• Improved recognition of Micro-Credentials based upon metadata like learning outcomes, competencies and skills, etc.
Sample Credential

MyCreds Credential

W3C Verifiable Credential

Download to Wallet

MATTR Digital Wallet

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Proposed vision for a Micro-credential framework

Credential:
- Learner Name
- Award Title
- Program Name
- Issuing Organization
- Issued Date
- ...

Skills Achieved:
- Skill 1
- Skill 2
- Skill 3
- ...

Delivery and Assessment:
- Hours/Credits
- Instruction
- Delivery methods
- Assessment

What if learners could share their micro-credentials and recipients could consume the secure and trusted credential information together with the relevant contextual information as data?
Q & A
Staying Connected

mycreds.ca/members/ecosystem

https://github.com/ARUCC-MyCreds-National-Network

https://join.slack.com/t/arucc-mycreds/shared_invite/zt-1htdnmpk5-FyFc5FOSFBgl8jF41acpiQ

info@aruccnationalnetwork.ca