

European Digital Credentials for Learning

Kia Likitalo
European Digital Credentials for Learning Team

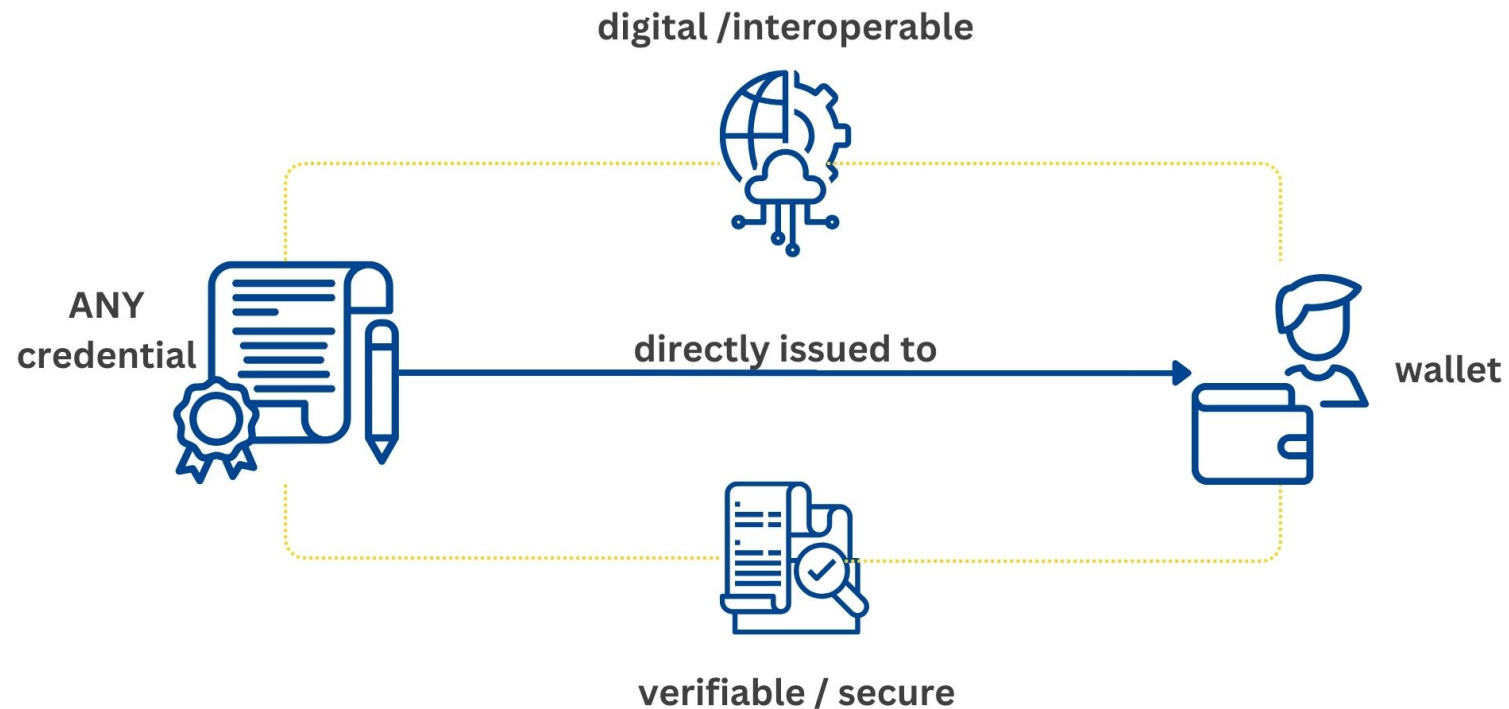
24 June 2024



What is a Digital Credential?

What is it?

A digital presentation of our traditional learning credentials, securely received directly in one's digital wallet



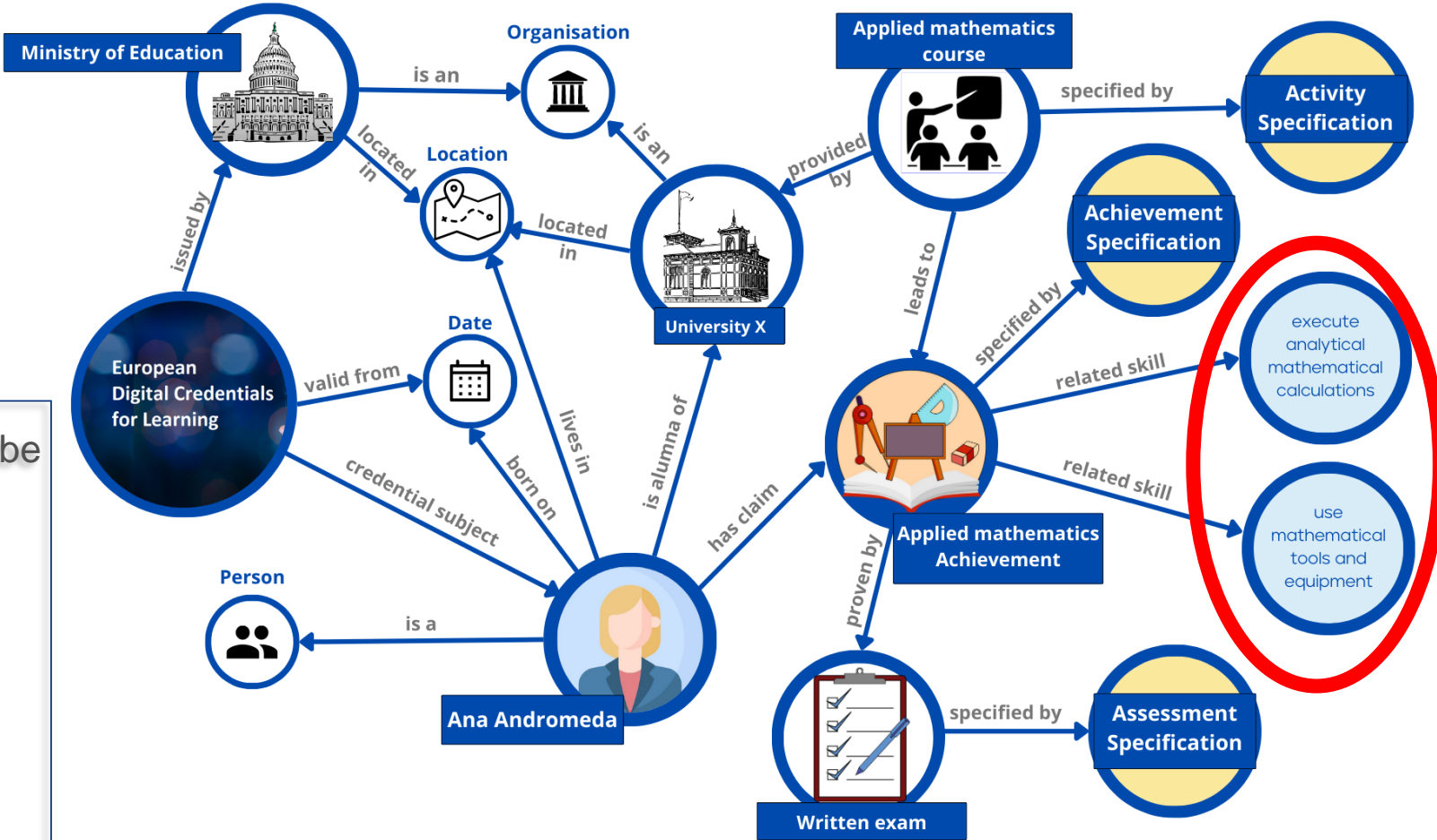
Standards support interoperability



Why do we need a common European standard?

- Central to the **EU's policy agenda**
- **Interoperability** with other EU & global standards
- Covers all E&T **levels** and the **whole course lifecycle**
- **Multilingual European** (not UK or USA based) solution
- **Tested** in real life use cases across the EU
- **Long term validity** and backwards compatibility
- Support **free movement** (transparency & portability)
- Serve **education providers and employers**
- **Privacy** by design (GDPR)
- Control by **owners**
- **User-friendliness** (easy to share, store, verify EDCs)
- EDCs embed and check against **QA data/records**
- **Trustworthy & tamper evident** credentials
- Rich of **linked open data** (QF, ESCO, ISCED-f +)
- **Free** and **open source**

Simplified diagramme of the ELM



487 properties describe

- Credential owner
- Organisations
- Achievements
- Activities
- Assessments
- Entitlements

Core EDC design aspects and features



Digitalising world



Security & Trust



Recognition



**Showcasing
Knowledge & Skills**

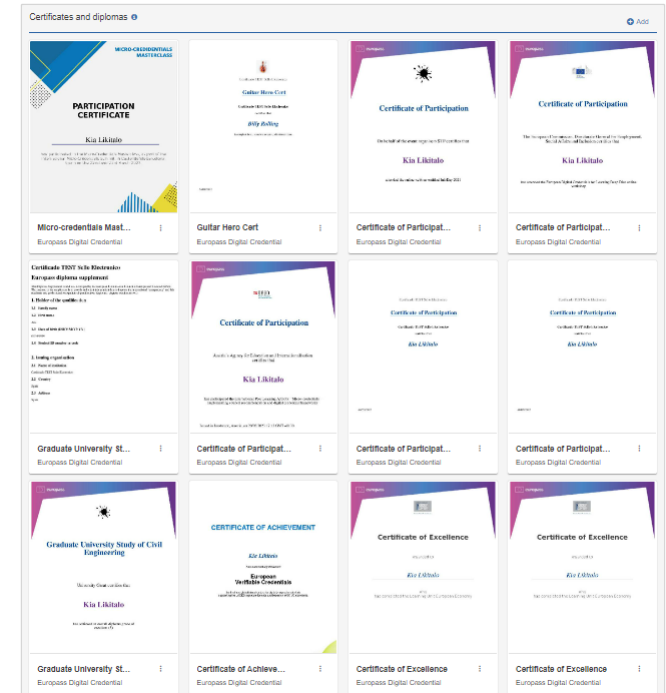
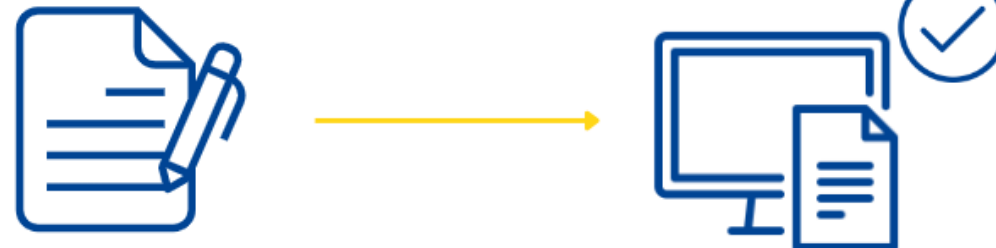


Ownership of data

Digital Transition for Credentials



- Moving beyond paper
- Digital ecosystem for learning **and** credentials
- Enriching learning/credential data
- Human **and** machine readable
- Storing credentials in one place
- Portable credential data
- Sharing credentials online
- Cost & time efficiency



Security & Trust: Beyond PDFs



- The **electronic Seal** is the digital equivalent of an institution's rubber stamp
- Complying with **eIDAS** makes credentials portable
- Instant, automatic **authentication and verification checks** certify the credential's authenticity and origin



europass European Union

signConfirmationModal

These credentials will be sealed with the data contained within your qualified eSeal:

Issuer: Certificado TEST Sello Electronico (VATES-B00000000) - Nombre Servicio Sellado TEST
Place of Issue: ES
Date & Time of Issue: 2023-03-06T07:21:32+01:00

Cancel Proceed

Home Export Upload another credential Share English

Ana Andromeda

Certificado TEST Sello Electronico

Master of Science in Civil Engineering

Recognition for credit

Postgraduate doctoral study

Civil engineer

Issuing organisation

Nombre Servicio Sellado TEST
Certificado TEST Sello Electronico

Spain <https://unix.eu>

Legal VATES-B00000000 VAT identifier 10065502 TAX identifier 12345678

Email
contact@jamk.fi

Accreditation

Institutional audit Show more



Instant, automatic authentication and verification

- Credentials are **tamper-evident** – fraud is easy to detect
- All valid EDCs have the same **standard format**
- All EDCs are sealed by a qualified or advanced **eSeal**
- Verification of a credential's **validity**

Authentication and Verification Check

- ✓ **FORMAT**
This credential is technically valid.
- ✓ **SEAL**
The credential is Sealed by Nombre Servicio Sellado TEST. This credential has not been tampered with since issue.
- **REVOCATION**
Verification step skipped
- ✓ **VALIDITY**
The credential is still valid.
- 🟢 **VERIFIED**

Authentication and Verification Check

- ✓ **FORMAT**
This credential is technically valid.
- ✗ **SEAL**
The seal of the credential has been broken. This document may have been tampered with.
- **REVOCATION**
Verification step skipped
- ✓ **VALIDITY**
The credential is still valid.
- ✗ **VERIFICATION FAILED**



Supporting Recognition

- **Verify the issuer's identity:** eSeals provide trust in credentials' origin
- **Structured, standardised data:** based on the European Learning Model (ELM)
- **Multilingual by default:** Content and navigation in 29 languages
- **Interoperability:** Aligned with existing frameworks and taxonomies (EQF/NQF, ISCED-F, ESCO, etc.)
- **Accreditation:** Instant verification of an institution's accreditation status



Master of Science in Civil Engineering

University X [Show more](#)

Awarding Date: 19/09/2019 [Show more](#)

Learning outcome summary [Show more](#)

Learning Outcomes

- Learning Outcome 2 related to applied mathematics [Show more](#)
- Learning Outcome 1 related to applied mathematics [Show more](#)

Achievement Information

Volume of Learning 1440 hours	NQF Level CROQF Level 5	Learning Settings formal learning
Mode of Learning Presential	Thematic Area Engineering and engineering trades	Language English French
maximum duration 21 months	Type Educational programme	

Learning activities

- Applied mathematics course
- Applied mathematics Study visit





- **Learning Achievements** can be linked to multiple learning outcomes
- **Learning Outcomes** can be described in detail
- Standard **knowledge and skill** concepts from ESCO and/or other taxonomies can be linked to LOs
- Linking **learning activities and assessments** can show means and proofs of LO acquisition

Master of Science in Civil Engineering

University X

Show more ▾

Awarding Date

19/09/2019

Learning outcome summary

Show more ▾

Learning Outcomes

Learning Outcome 2 related to applied mathematics

Reusability Level

sector specific skills and competences

Related ESCO Skills

compile reservoir performance plans

Related Skills

Show less ▲

Learning Outcome 1 related to applied mathematics

Reusability Level

cross-sector skills and competences

Related ESCO Skills

execute analytical mathematical calculations, use mathematical tools and equipment

Related Skills

Digital content creation Proficiency Level Advanced 5

Show less ▲

Showcase Knowledge & Skills



- **Learning Achievements** can be linked to multiple learning outcomes
- **Learning Outcomes** can be described in detail
- Standard **knowledge and skill** concepts from ESCO and/or other taxonomies can be linked to LOs
- Linking **learning activities and assessments** can show means and proofs of LO acquisition

The screenshot displays a user profile for 'Kia Likalo' on the left, with a dropdown menu showing the selected course 'Master of Science in Civil Engineering'. The main content area shows the course details for 'Faculty of Civil Engineering, Architecture and Geodesy', including contact information, legal ID, and awarding date. Below this, a section titled 'Learning Outcomes' is expanded, showing four detailed LO cards. Each card includes the LO title, type, reusability level, and related ESCO skills and skills.

LO1 related to applied mathematics	LO2 related to applied mathematics
Type knowledge	Type skill
Reusability Level cross-sector skills and competences	Reusability Level sector specific skills and competences
Related ESCO Skills use mathematical tools and equipment , execute analytical mathematical calculations , geodesy	Related ESCO Skills use mathematical tools and equipment , execute analytical mathematical calculations , geodesy
Related Skills applied mathematics , perform engineering calculations , construct earthquake resistant structures	Related Skills applied mathematics , perform engineering calculations , construct earthquake resistant structures

Data rich credentials allow for advanced services

The Data Layer allows computers to understand the data enclosed within a credential



Checking eligibility for Jobs / Courses



Recommending courses / skills



Comparing performance



Skills Intelligence

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      }  
    }  
  }  
}
```


Empowerment Through Data Ownership

- **Learner-Centric Approach** grants the credential ownership to the individual
- **Instant Access** to a person's credentials, irrespective of source, size or formality
- **Bypass Bureaucracy** – no need to request certified copies from issuer
- **Controlled Sharing** with designated third parties for customised periods

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Recipient information ⓘ

Names and organisations

More than one recipients can be added

Reason for sharing

Link

Choose how long the file will be available for. You can change this date on your Activity Feed

Valid until: *

1 2 2024

You can update the expiry date at any time in your Activity Feed.

Copy the link to share your file(s)

<https://europa.eu/europass/eportfolio/screen/share/074884a0-8b4c-4d6> **COPY** **Generate link**

Close

Expressing Annex I Content with EDC

Mandatory elements:	Identification of the learner
	Title of the micro-credential
	Country/Region of the issuer
	Awarding body
	Date of issuing
	Learning outcomes
	Notional workload needed to achieve the learning outcomes (in ECTS credits, wherever possible)
	Level (and cycle, if applicable) of the learning experience leading to the micro-credential (EQF, QF-EHEA), if applicable
	Type of assessment
	Form of participation in the learning activity
Type of quality assurance used to underpin the micro-credential	
Optional elements, where relevant (non-exhaustive list)	Prerequisites needed to enrol in the learning activity
	Supervision and identity verification during assessment (unsupervised with no identity verification, supervised with no identity verification, supervised online, or onsite with identity verification)
	Grade achieved
	Integration/stackability options (standalone, independent micro-credential/integrated, stackable towards another credential)
	Further information

The screenshot displays the EDC interface for creating a digital micro-credential. At the top, a 'Micro-Credential' header shows details like 'Issuing date: 31/12/2022', 'Valid from: 31/12/2022', 'Type: Generic Mandated Issue', and 'Credential ID: um-credential:8a18c034-4a85-4f68-8d5d-30831981852e'. Below this, there are options for 'Credential summary', 'Export', 'Upload another credential', and 'Share'.

The main section is titled 'Digital micro-credential creation' and is for the 'University of Zed'. It lists 'Legal ID: 0000', 'VAT Number: 654321', and 'Research Alliance: Res1818'. The 'Learning Outcomes' section includes 'Developing digital content' (with Reusability Level, Related ESCO Skills, and Related Skills) and 'Communication, collaboration and creativity' (with Related ESCO Skills and Related Skills). The 'Achievement Information' section shows 'Volume of Learning: 60 hours', 'EQF Level: Level 6', 'NQF Level: IE NQF Level 6', 'Credit points: European Credit Transfer System 2', 'Learning Settings: non-formal learning', 'Mode of Learning: Blended', 'Thematic Area: Personal skills and development...', 'Language: English', and 'maximum duration: 1 month'. The 'Type' is 'Short learning programme'. The 'Learning activities' section includes 'EDC building training course'.

Expressing Annex 1 content with EDC

Mandatory elements:	Identification of the learner
	Title of the micro-credential
	Country/Region of the issuer
	Awarding body
	Date of issuing
	Learning outcomes
	Notional workload needed to achieve the learning outcomes (in ECTS credits, wherever possible)
	Level (and cycle, if applicable) of the learning experience leading to the micro-credential (EQF, QF-EHEA), if applicable
	Type of assessment
	Form of participation in the learning activity
Optional elements, where relevant (non-exhaustive list)	Type of quality assurance used to underpin the micro-credential
	Prerequisites needed to enrol in the learning activity
	Supervision and identity verification during assessment (unsupervised with no identity verification, supervised with no identity verification, supervised online, or onsite with identity verification)
	Grade achieved
	Integration/stackability options (standalone, independent micro-credential/integrated, stackable towards another credential)
Further information	

Micro-Credential

Issuing date: 01/12/2023 Valid from: 31/12/2022 Type: Generic,Mandatory Issue Credential ID: urn:credential:8a18c034-4a85-41e8-8a50-3f563881e52

Credential summary Export Upload another credential Share English

Ana Andromada

ORGANIZACION TEST

Digital micro-credential creation

EDC building training course

Digital artefact assessment

Digital micro-credential creation

University of Zed Show less ^

Legal ID: 0000 VAT Number: 654321 Research Alliance: Res1818

Learning Outcomes

Developing digital content

Reusability Level
cross-sector skills and competences

Related ESCO Skills
develop digital content

Related Skills
Developing digital content,
Developing digital content Level 4

Show less ^

Communication, collaboration and creativity

Related ESCO Skills
stimulate creativity in the team, establish collaborative relations, communicate with target community

Related Skills

Show less ^

Achievement Information

Volume of Learning: 60 hours **EQF Level**: Level 6 **NQF Level**: IE NQF Level 6

Credit points: European Credit Transfer System 2 **Learning Settings**: non-formal learning **Mode of Learning**: Blended

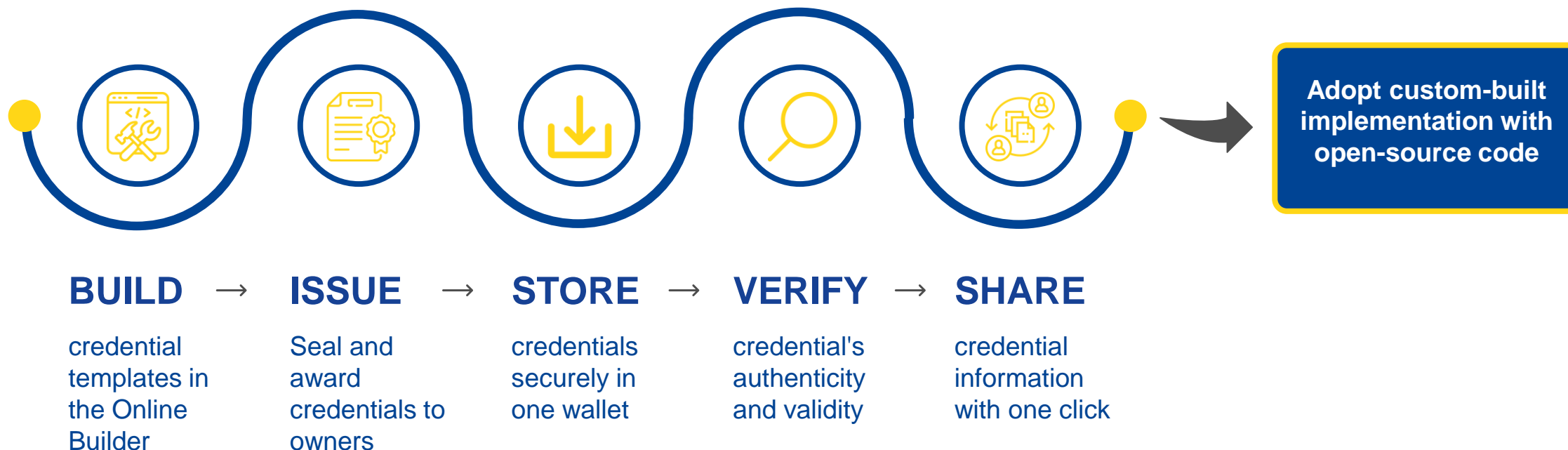
Thematic Area: Personal skills and development, Inter-disciplinary programmes and qualifications involving Information and Communication Technologies (ICTs) **Language**: English **maximum duration**: 1 month

Type: Short learning programme

Learning activities

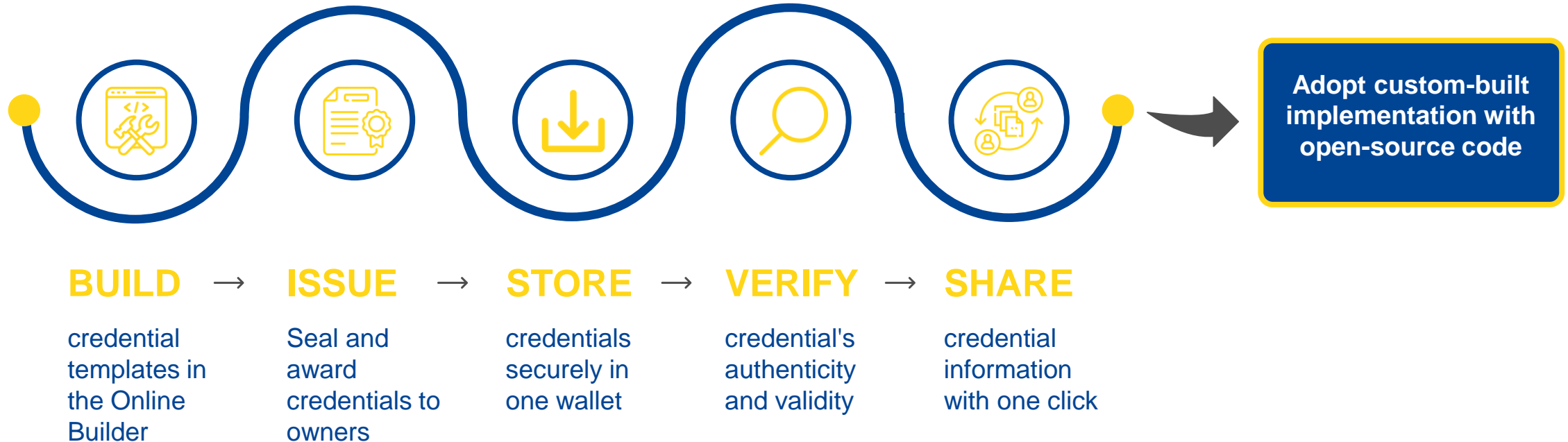
EDC building training course

Start with web-based free tools



What is offered by the infrastructure?

Start with web-based free tools



DEMO

How to get started

1

Start Your Exploration

Venture into our Playground and build your first credential without any prerequisites

2

Anchor with Trust

Get your eSeal via a [Trust Service Provider](#)

3

Customise your credential

What would you like YOUR credential to look like?

4

Embark on Issuing

Got your eSeal? Start issuing!

5

Go one step further...

Ease your processes by integrating the EDC framework into your existing IT structure



Q&A

Still have more questions?

Get in touch at:

EMPL-ELM-SUPPORT@ec.europa.eu

