

Mapping of the Annex I of the Council Recommendation on a European approach to micro-credentials and the European Learning Model

Introduction

The [Council Recommendation on a European approach to micro-credentials](#) includes a short list of required and optional standard elements to describe micro-credentials. These standard elements are included in the [European Learning Model](#) (ELM). The ELM integrates other elements as well, from a wider range of European standards, such as the [European Qualifications Framework Council Recommendation](#), the [Europass Decision](#), the [Diploma Supplement](#), etc. By providing the tools to build, issue, store and share ELM-based digital credentials, the [EDC infrastructure](#) offers a way to make use of all these existing standards for the provision of information on skills and learning. This document presents a mapping of Annex I of the Recommendation to the specific classes and properties of the European Learning Model that express these standard micro-credential elements, including their Thymeleaf references displayed in square brackets with grey background.

Mandatory elements

Identification of the learner

The European Learning Model, and the European Digital Credentials for Learning application profile, permit the identification of a learner, represented by the [Person class](#), by a wide range of properties, including name [`credential.credentialSubject.fullName`], date and place of birth [`credential.credentialSubject.dateOfBirth`] and [`credential.credentialSubject.placeOfBirth.address[0].fullAddress.noteLiteral`], country of citizenship [`credential.credentialSubject.citizenshipCountry.prefLabel`], email [`credential.credentialSubject.contactPoint.emailAddress`], registered address [`credential.credentialSubject.location.citizenshipCountry.address[0].fullAddress.noteLiteral`], various identifiers [e.g. `credential.credentialSubject.nationalID.notation`], etc.

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)
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	

Title of the micro-credential

The title of the micro-credential, represented by the [European Digital Credential class](#), can be referenced by the `[credential.displayParameter.title]` code in the JSON file.

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	Level (and cycle, if applicable) of the learning experience leading to the micro-credential (EQF, QF-EHEA), if applicable
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	Form of participation in the learning activity
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	Optional elements, where relevant (non-exhaustive list)
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Grade achieved	
Integration/stackability options (standalone, independent micro-credential/integrated, stackable towards another credential)	
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Country/Region of the issuer

The issuer is the [Organisation](#) that applies its advanced or qualified electronic seal to the credential. Through this signature, or seal, the issuing organisation certifies the authenticity of the credential, and the correctness of origin of each claim contained within. The country of the issuer `[credential à issuer à location à address à countryCode à prefLabel]` is data contained in, and referenced from, the issuing organisation's electronic seal at the time of sealing the credential. Note that the issuing

organisation may, or may not, be the same organisation as the one awarding the claims contained in the credential. In many use-cases Organisation A may seal credentials on behalf of Organisation B.

Mandatory elements:	Identification of the learner
	Title of the micro-credential
	Country/Region of the issuer
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	Level (and cycle, if applicable) of the learning experience leading to the micro-credential (EQF, QF-EHEA), if applicable
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	Optional elements, where relevant (non-exhaustive list)
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Awarding body

The awarding body, represented by the [Organisation class](#), can be identified and described by a wide range of properties, including name

`[credential.credentialSubject.hasClaim[0].awardedBy.awardingBody[0].`

`legalName]`, legal and contact addresses `[credential.credentialSubject.hasClaim[0].awardedBy.`

`awardingBody[0].location[0].address[0].fullAddress.noteLiteral` and `credential.credentialSubject.`

`hasClaim[0].awardedBy.awardingBody[0].contactPoint[0].address[0].fullAddress.noteLiteral]`, logo

`[credential.credentialSubject.hasClaim[0].awardedBy.awardingBody[0].logo]`, homepage `[credential.`

`credentialSubject.hasClaim[0].awardedBy.awardingBody[0].homepage]`, various identifiers, [e.g.

`credential.`

`credentialSubject.hasClaim[0].awardedBy.awardingBody[0].identifier[0].notation]`, etc. Note that the

awarding body may, or may not, be the same organisation as the one sealing the credential. In many use-cases Organisation A may seal credentials on behalf of Organisation B.

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	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)
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	Further information

The screenshot shows the 'Awarding bodies' section for a 'Learning Provider'. It includes the following information:

- Also known as:** LProv
- Homepage:** <https://learningprovider.edu>
- Legal address:** Instant Street 16, D08 Dublin, Ireland
- Member of:** Research Alliance (info@resa.org)
- Identifiers:**
 - Legal ID:** 0000
 - Research Alliance ID:** Res1818
- Signed by:** ORGANIZACION TEST
- Also known as:** TEST SEAL

Date of issuing

The issuing date is the date on which the [European Digital Credential](#) was sealed and sent by the issuing organisation [credential à issued]. Note, that this date is different from the credential's valid from date, a distinct credential property that expresses the earliest date when the information associated with the credential subject became valid.

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	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)
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	Further information

The screenshot shows the 'Micro-Credential' details page. It includes the following information:

- Micro-Credential:** Issuing date: 22/04/2024, Valid from: 01/01/2024, Type: Generic/Mandated Issue, Credential id: urn:credential:693d2c9c-37cc-4908-b83f-03b89181162
- Authentication and Verification Check:**
 - FORMAT:** This credential is technically valid.
 - SEAL:** The credential is Sealed by TEST SEAL. This credential has not been tampered with since issue.
 - REVOCATION:** Function under development. Contact the awarding body for information about this credential's revocation status.
 - ACCREDITATION:** Accreditation does not apply to this Credential.
 - VALIDITY:** The credential is still valid.
 - VERIFIED:** (Status icon)

Learning outcomes

[Learning Outcomes](#) [credential.credentialSubject.hasClaim[0].specifiedBy.learningOutcome], that can contain direct references to concrete knowledge, skill and/or competence concepts from controlled vocabularies such as e.g. the [ESCO skill taxonomy](#)

[credential.credentialSubject.hasClaim[0].specifiedBy.learningOutcome[0].relatedESCOSkill[0].prefLabel] or [Digital Competence Framework](#) [credential.credentialSubject.hasClaim[0].specifiedBy.learningOutcome[0].relatedSkill[0].prefLabel], can form part of Learning Achievement claims included in a European Digital Credential for Learning. Note, that the [Learning Achievement Specification class](#) also has a property titled learning outcome summary [credential.credentialSubject.hasClaim[0].specifiedBy.learningOutcomeSummary], that allows the collective description of all learning outcomes with simple text.

Mandatory elements:	Identification of the learner
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	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)
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Notional workload

The notional workload to achieve the learning outcomes specified in the micro-credential can be expressed in the number of [credit points](#) assigned to the [Learning Achievement Specification](#) from within a specific credit point framework

[credential.credentialSubject.hasClaim[0].specifiedBy.creditPoint[0].point]. Please note, that while higher education institutions should use the European Credit Transfer and Accumulation System (ECTS) and comply with the principles in Annex V to the [EQF Recommendation](#), where possible, providers that do not use the ECTS may use other systems or types of information that can effectively describe the workload. An alternative measure of the notional workload can be the estimated number of hours the learner is expected to spend engaged in learning to earn the award [credential.credentialSubject.hasClaim[0].specifiedBy.volumeOfLearning].

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	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)
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	Further information

Ana Andromeda

Issuer

Digital micro-credential creation

Digital micro-credential creation

Learning Provider Show less ^

Legal ID: 0000 Research Alliance ID: Res1818

^ Learning Outcomes

Communication, collaboration and creativity

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

Related Skills
manage findable accessible interoperable and reusable data

Show less ^

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 ^

^ Achievement information

Volume of Learning
60 hours

Credit points
European Credit Transfer System 2

EQF Level
Level 6

Learning Settings
non-formal learning

NQF Level
IE NQF Level 6

Mode of Learning
Blended

Level (and cycle, if applicable) of the learning experience

Annex 1 of the Council Recommendation specifies that, *if applicable*, the level of the learning experience leading to the micro-credential is a mandatory element of the credential. In the European Learning Model the [Learning Achievement Specification class](#) has an education level property [`credential.credentialSubject.hasClaim[0].specifiedBy.educationLevel`] that can be used to specify this (by e.g. beginner, intermediate, advanced) from within a framework. A sub-class of Learning Achievement Specification, called [Qualification](#), has 2 additional specific properties, namely the EQF level [`credential.credentialSubject.hasClaim[0].specifiedBy.eqfLevel.prefLabel`] and QF level [`credential.credentialSubject.hasClaim[0].specifiedBy.nqfLevel[0].prefLabel`] to express the education level by using the multilingual [European Qualifications Framework](#) and [Qualifications Framework](#) controlled vocabularies.

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	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

Ana Andromeda

Issuer

Digital micro-credential creation

Digital micro-credential creation

Learning Provider Show less

Legal ID: 0000 Research Alliance ID: Res1818

Learning Outcomes

Communication, collaboration and creativity

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

Related Skills
manage findable accessible interoperable and reusable data

Show less

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

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

Type of assessment

The type of assessment, a property of the [Learning Assessment Specification class](#), specifies and describes the potential means to assess a person's learning achievements [credential.credentialSubject.hasClaim[0].specifiedBy.provenBy[0].dcType]. The assessment type can be expressed either by using the multilingual [Assessment type](#) controlled vocabulary, or the credential issuer's own terms.

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	Type of assessment
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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
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	Grade achieved
	Integration/stackability options (standalone, independent micro-credential/integrated, stackable towards another credential)
	Further information

Ana Andromeda

Issuer

Digital micro-credential creation

EDC building training course

Digital artefact assessment

Digital artefact assessment

Awarded By

Learning Provider Show less

Legal ID: 0000 Research Alliance ID: Res1818

Grade: Pass

Assessment Information

Assessment Type
artefact assessment

Mode of Assessment
Online

Assessment reliability proven by
Unsupervised without ID Verification

Grading Scheme

Title: Generic grading

Description: The learner will have passed the assessment upon the successful submission of an ELM standard compliant un-signed sample credential.

Form of participation in the learning activity

The ELM uses the mode property [credential.credentialSubject.hasClaim[0].specifiedBy.influencedBy[0].

mode] of the [Learning Activity Specification class](#), to describe the form of participation in learning activities. To express the mode of learning, the ELM proposes the use of the [Mode of learning and assessment](#) multilingual controlled vocabulary, or the issuer's own terms. Please note that the Learning Activity Specification class also has a type property [credential.credentialSubject.hasClaim[0].specifiedBy.influencedBy[0].dcType] to categorise and label the activities (e.g. classroom or e-learning coursework, internship, volunteering, etc.) that learners can engage with in order to achieve pre-defined learning outcomes. This property can be expressed either by using the multilingual [Learning activity type](#) controlled vocabulary, or the credential issuer's own terms.

Mandatory elements:	Identification of the learner	
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	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
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Grade achieved		
Integration/stackability options (standalone, independent micro-credential/integrated, stackable towards another credential)		
Further information		

The screenshot shows a digital micro-credential interface. At the top, it identifies the issuer as 'Ana Andromeda'. The main title is 'EDC building training course'. It lists the 'Awarded By' as 'Learning Provider' and provides a 'Legal ID' of '0000' and a 'Research Alliance ID' of 'Res1818'. The description states: 'This online course allows the learner to familiarise themselves with the process of creating ELM standard compliant digital micro-credentials that contain data on all mandatory elements specified in Annex 1 of the Proposal for a Council Recommendation on a European approach to micro-credentials for lifelong learning and employability.' Below this, an 'Activity information' section displays: 'Volume of Learning' as '4 hours', 'Languages of Instruction' as 'English', and 'Mode of Learning' as 'Blended'. The 'Type' is listed as 'e-learning coursework'.

Type of quality assurance used to underpin the micro-credential

Some micro-credentials (e.g. of higher education providers), are institutionally linked to formal accreditation records stored in databases, such as the Database of External Quality Assurance Results (DEQAR), while others may incorporate self-attested quality assurance information. To document this information the ELM, and EDCs, utilise the [Accreditation class](#) to express the accreditation's title [credential.evidence[0].accreditation.title], type, e.g. Institutional or Programme License [credential.evidence[0].accreditation.dcType], dates when an accreditation decision was made [credential.evidence[0].accreditation.dateIssued], or when a review needs to take place [credential.evidence[0].accreditation.reviewDate], and the accreditation decision [credential.evidence[0].accreditation.decision] in a structured manner. Accreditation properties also allow the identification of the accrediting agent, with the entire subset of [Organisation](#) attributes

[credential.evidence[0].accreditation.accreditingAgent.X¹], and – if applicable – restrictions to thematic areas, jurisdictions, and/or EQF levels [credential.evidence[0].accreditation.limitField], [credential.evidence[0].accreditation.limitJurisdiction] and [credential.evidence[0].accreditation.limitEQFLevel] respectively, and more.

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Accreditation

Accreditation name
Institutional review

Accreditation type
Institutional License

Date of accreditation
02/11/2021 00:00

Decision
positive

Accrediting agent
[Redacted]

[Accreditation report](#)

EQF Level of accreditation
Level 6
Level 8
Level 5
Level 7

Review date
02/11/2027 00:00

Related documents
[Assessment report](#)

Optional elements

Prerequisites needed to enrol in the learning activity

Sometimes a micro-credential can only be earned if the learner fulfils certain prerequisites (e.g. had beginner level knowledge before enrolling in an advanced level course). These prerequisites can be expressed by using the Entry Requirement property of the [Learning Achievement Specification class](#) [credential.credentialSubject.hasClaim[0].specifiedBy.entryRequirement].

¹ X here could stand for more granular data about an organisation's name, identifiers, contact details, etc.

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Supervision and identity verification

Credential issuers can use a special [Learning Assessment](#) property [`credential.credentialSubject.hasClaim[0].specifiedBy.provenBy[0].idVerification`] to document what means were applied to ensure assessment reliability. This property can be expressed either by using the multilingual [Method of supervision and verification](#) controlled vocabulary, or the credential issuer's own terms.

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	Type of assessment	
	Form of participation in the learning activity	
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Grade achieved

When an EDC contains a [Learning Assessment](#) claim, the provision of an individual grade [`credential.credentialSubject.hasClaim[0].specifiedBy.provenBy[0].grade`] in the credential metadata

is compulsory. Credential issuers are advised to also use the Grading Scheme property to describe how a third-party viewer can interpret a given grade.

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Integration/stackability options

Micro-credentials are designed to be modular so that other micro-credentials may be added to create larger credentials, allowing flexibility in credential composition. While the EDC infrastructure does not currently support the stacking of smaller sealed credentials into a larger aggregated credential, the hasPart property of Claims [`credential.credentialSubject.hasClaim[0].hasPart[0].Y2`] allows the demonstration of multiple smaller learning achievements forming part of a larger one, and as such, EDCs can be built to reflect this granularity.

Further information

The [European Learning Model](#) comprises of 50 classes and nearly 500 properties, and European Digital Credentials for Learning can use these interconnected classes and properties to describe any aspect of learning, irrespective of the credential's size, source or formality. While all the classes have their comprehensive array of specific properties, the use of which would allow the provision of further useful information about the credential, most classes also have an [`Z3.additionalNote`] property, that can accommodate any additional details that are not covered distinctly by a particular ELM property.

² Y here could stand for more granular data about a sub-Claim's title, type, awarding body, and other details.

³ Z here stands for the path to the Class, to which the additional note property belongs.