



Digitally-Signed Credentials

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Framework for digitally-signed credentials

policy-perspective

Action 3 of the Digital Education Action Plan establishes that the way forward to make **better use of digital technology** for teaching and learning encompasses an action to:



“Provide a framework for issuing digitally-certified qualifications and validating digitally-acquired skills that are trusted, multilingual and can be stored in professional profiles (CVs) such as Europass. The framework will be fully aligned with the European, Qualifications Framework for Lifelong Learning (EQF) and the European Classification of Skills, Competences, Qualifications and Occupations (ESCO)”

[Digital Education Action Plan \(January 2018\)](#)

Framework for digitally-signed credentials

scope



Recognise learning outcomes achieved in formal, informal and non-formal settings from a **lifelong learning perspective**



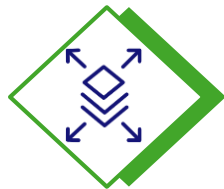
Embed well-established **classifications and credit systems** at European level



Be based on **open standards**



Use a **credit-based framework** to allow for **flexibility in documenting** and acknowledging learning achievements from different contexts



Made available for **free to foster its easy and flexible adoption**



Secure personal data

Framework for digitally-signed credentials

definition of a digitally-signed credential

- A credential, in its most essential form, is a **documented statement** containing claims made about a person.
- A Europass **learning credential** describes that the owner has certain skills or has achieved certain learning outcomes through formal, non-formal or informal learning context.
- A **digitally-signature (e-Seal)** guarantees the origin and integrity of the a document.



Framework for digitally- signed credentials

components of a credential

Europass digitally-signed credentials will be tamperproof and made up of six elements:



A Europass credential

contains information about



Metadata
(data about the credential)



Issuer



Subject
(claims about person)



eSeal

describes claims relates to



Activities



Assessment



Achievement



Attestation



Learning Outcomes



Entitlements

150 hours of
coursework

100 hours of
apprenticeship

Final Examination
Grade B

DE Qualification as
a Painter

Recognition of
qualification in FI

LO of skill of
painting

Entitlement to
work as a painter

Framework for digitally-signed credentials

Stacking and Combining Credentials

Issuer: University of Nantes
Claim: **Achievement** of Bachelors
Degree in Nursing

Issuer: University of Nantes
Claim: Achievement of 90 ECTS in
Nursing

Issuer: University of Malta
Claim: Achievement of 30 ECTS in
Nursing (Erasmus)

Issuer: Tampere Teaching Hospital
Claim: Activity of 600 hours of
Nursing Practice

Framework for digitally-signed credentials

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Nursing

Issuer: University of Malta
Claim: Achievement of 30 ECTS in
Nursing (Erasmus)

Issuer: Tampere Teaching Hospital
Claim: Activity of 600 hours of
Nursing Practice

Issuer: NARIC Malta
Claim: Attestation that degree is equivalent to
MT degree in nursing

Framework for digitally-signed credentials

Functions



Identify

Learners who will be awarded the credential



Issue

credentials and send them to their owners



Store

credentials securely in a single online or offline wallet



Verify

if the credential is authentic, valid and issued by an accredited organisation



Share

the information in the credential with any other person or organisation with just a click

Scenarios for the implementation of the EDCI

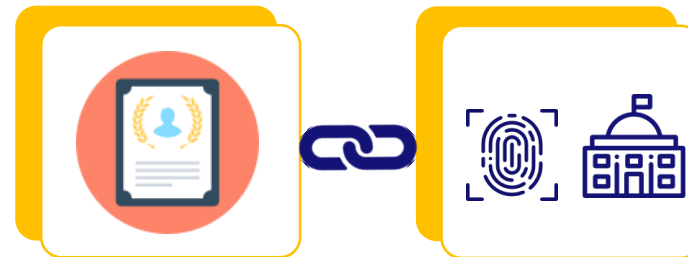
Identify

Today: Paper-based



The credential states the identity of the awarding body and credential owner

New Europass

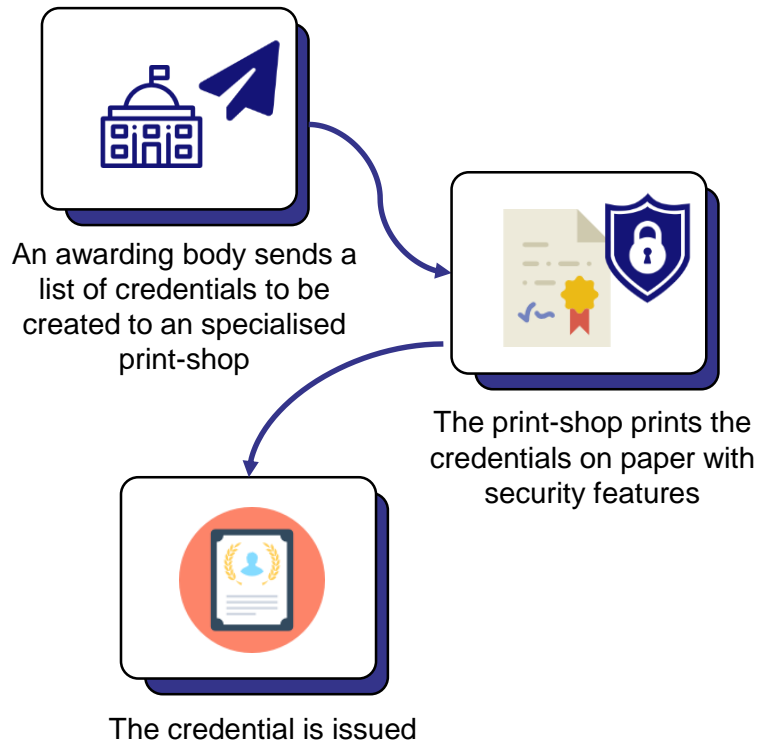


The digitally-signed credential is linked to the identity of the awarding body, in a way that only the awarding body may issue such a credential

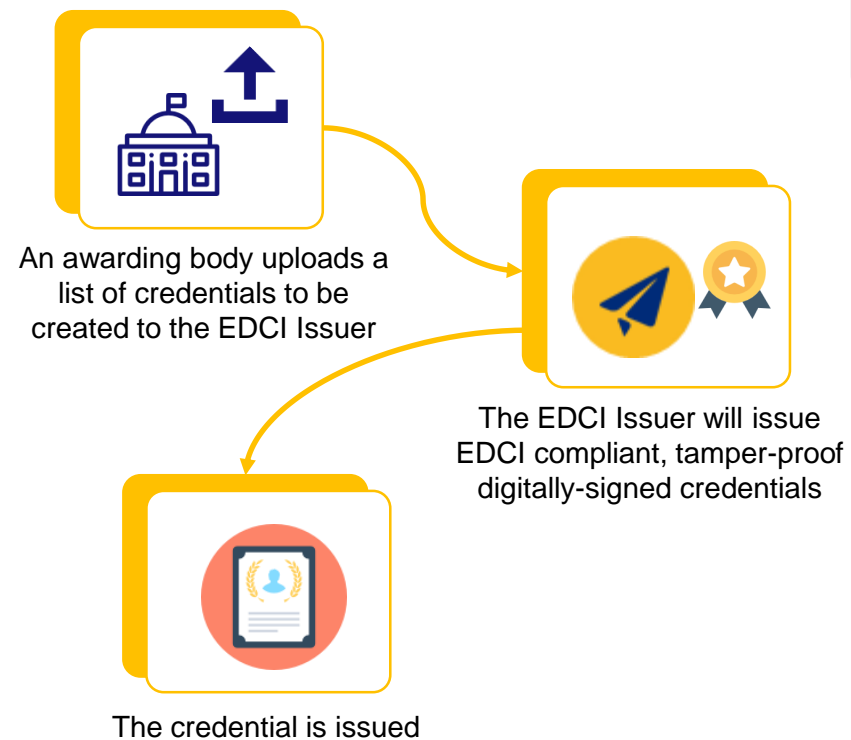
Scenarios for the implementation of the EDCI

Issue

Today: Paper-based



New Europass



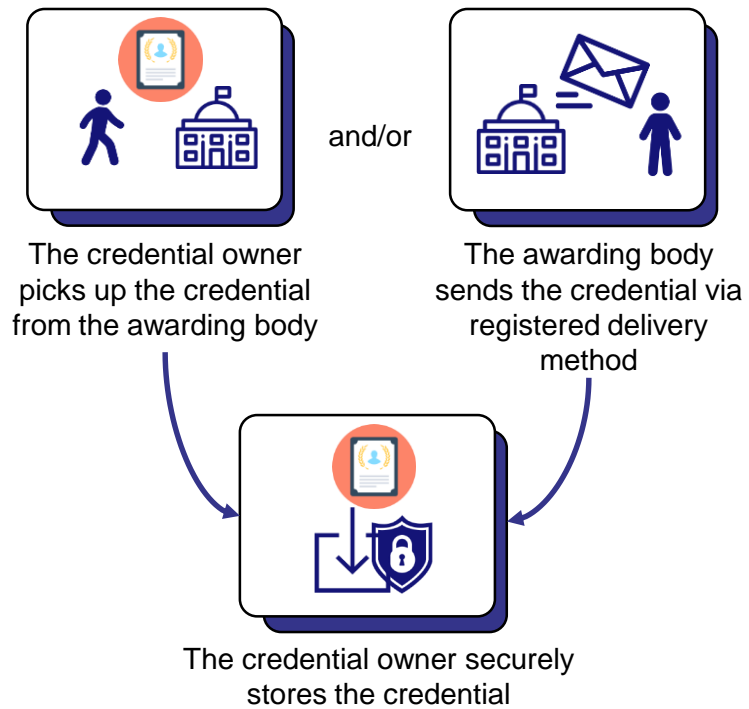
No obligation to use
EDCI-Issuer

*Any software can be used
to issue standard-
compliant credentials*

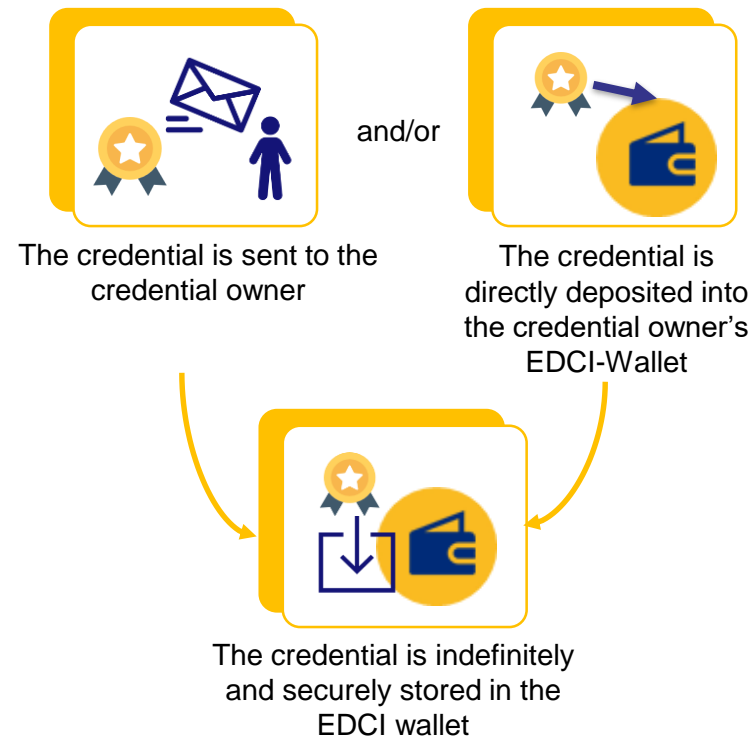
Scenarios for the implementation of the EDCI

Store

Today: Paper-based



New Europass



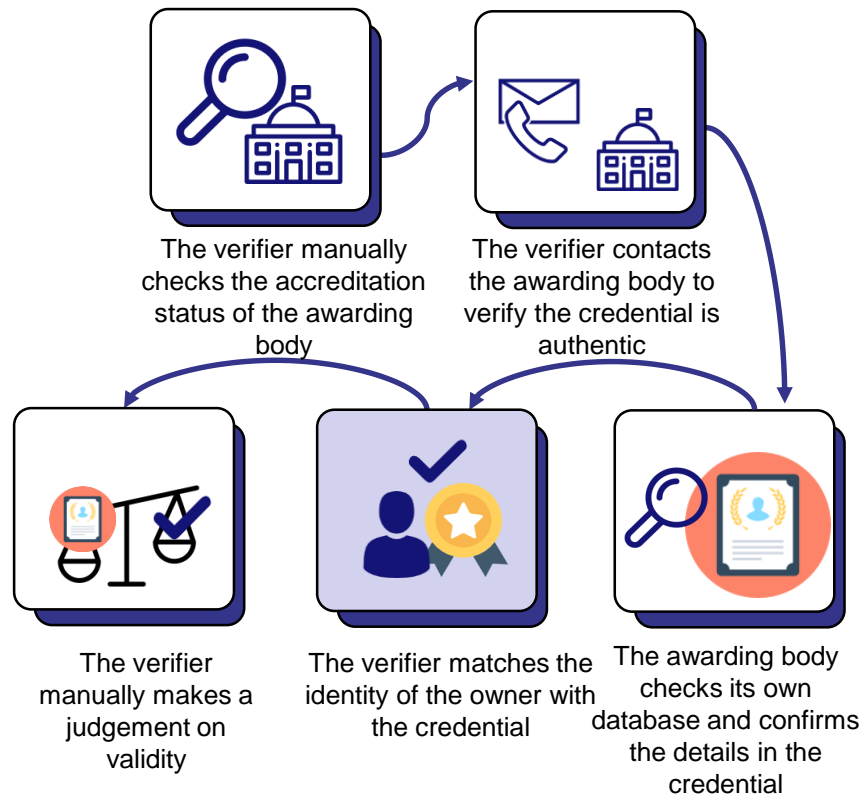
No obligation to use EDCI-Wallet.

Credential-owner can run a wallet on their own device, or obtain one from any provider.

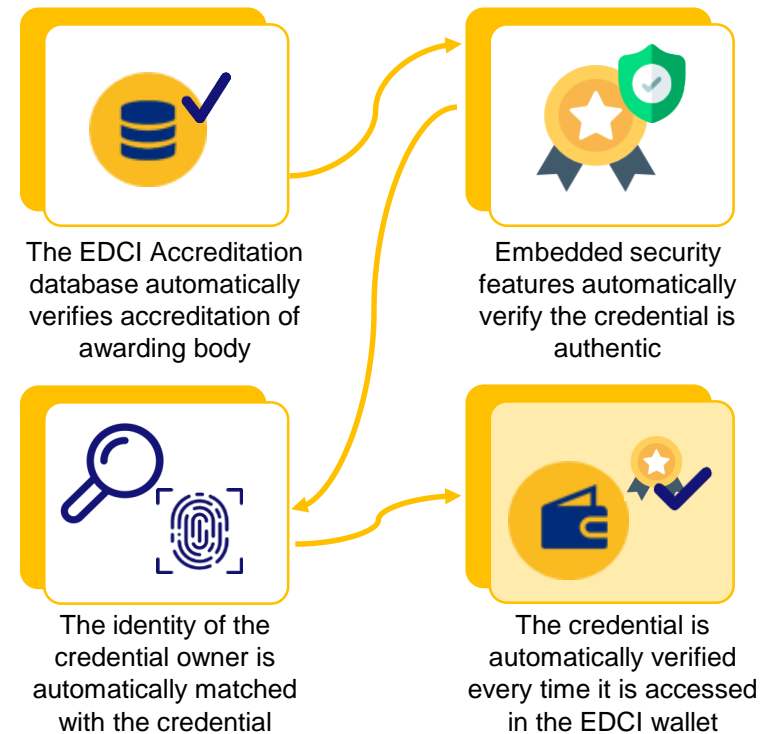
Scenarios for the implementation of the EDCI

Verify

Today: Paper-based (manual verification)



New Europass (automatic verification by wallet)



Scenarios for the implementation of the EDCI

Share

Today: Paper-based



The credential owner requests a new certified copy of the credential from the awarding body



The credential owner sends or presents the copy of the credential to the requester

New Europass



The credential owner shares a link to the credential in their EDCI-wallet

No obligation to use EDCI-Wallet.

Link can be shared to any cloud-based wallet.

Framework for digitally-signed credentials

a European Digital Credentials Infrastructure (EDCI)

This infrastructure encompasses the technical specifications to implement the framework. The EDCI comprises of core building blocks to help operationalise the framework:



eIDAS



Standards



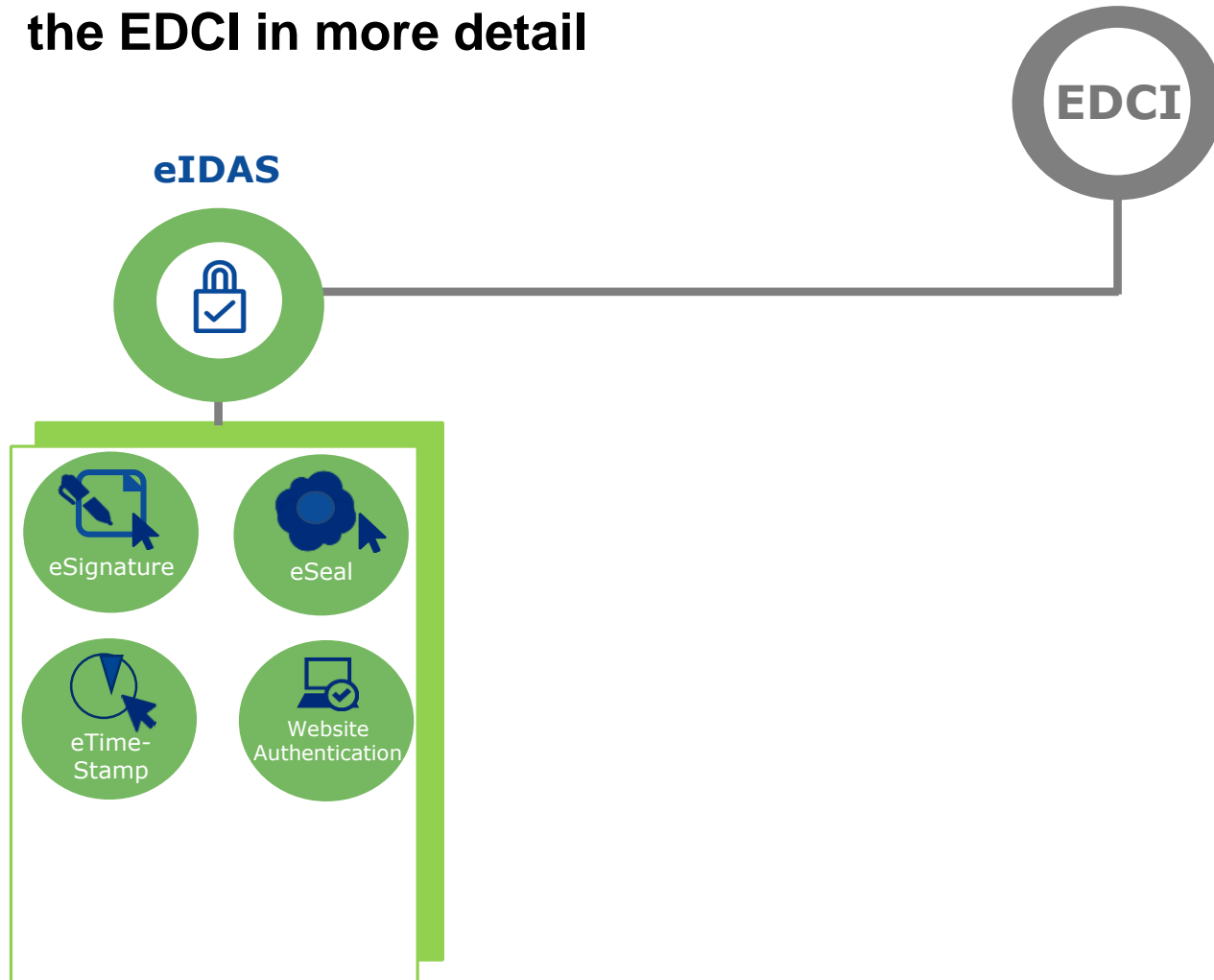
Services



Software

Framework for digitally-signed credentials

the EDCI in more detail

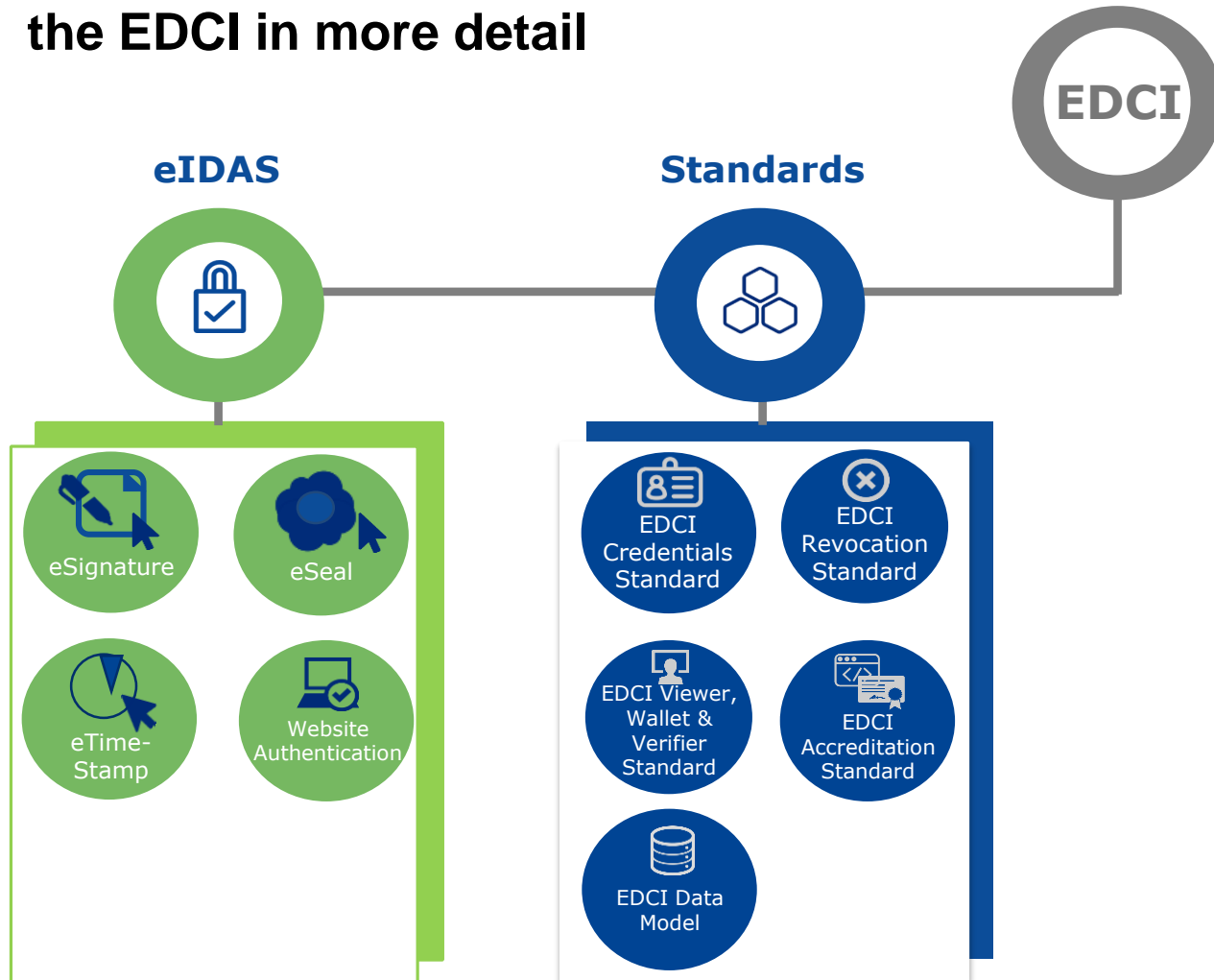




European
Commission

Framework for digitally-signed credentials

the EDCI in more detail

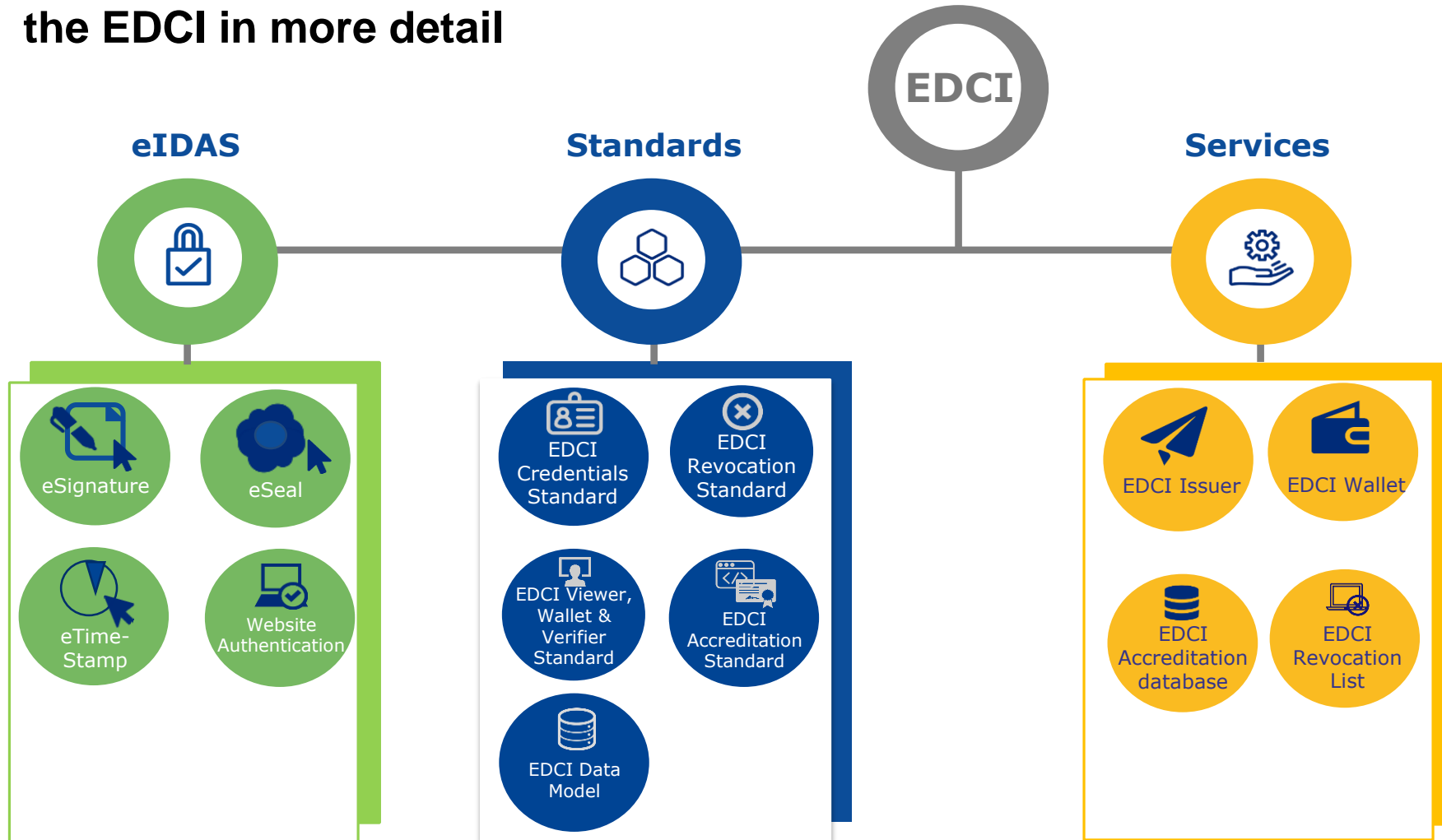




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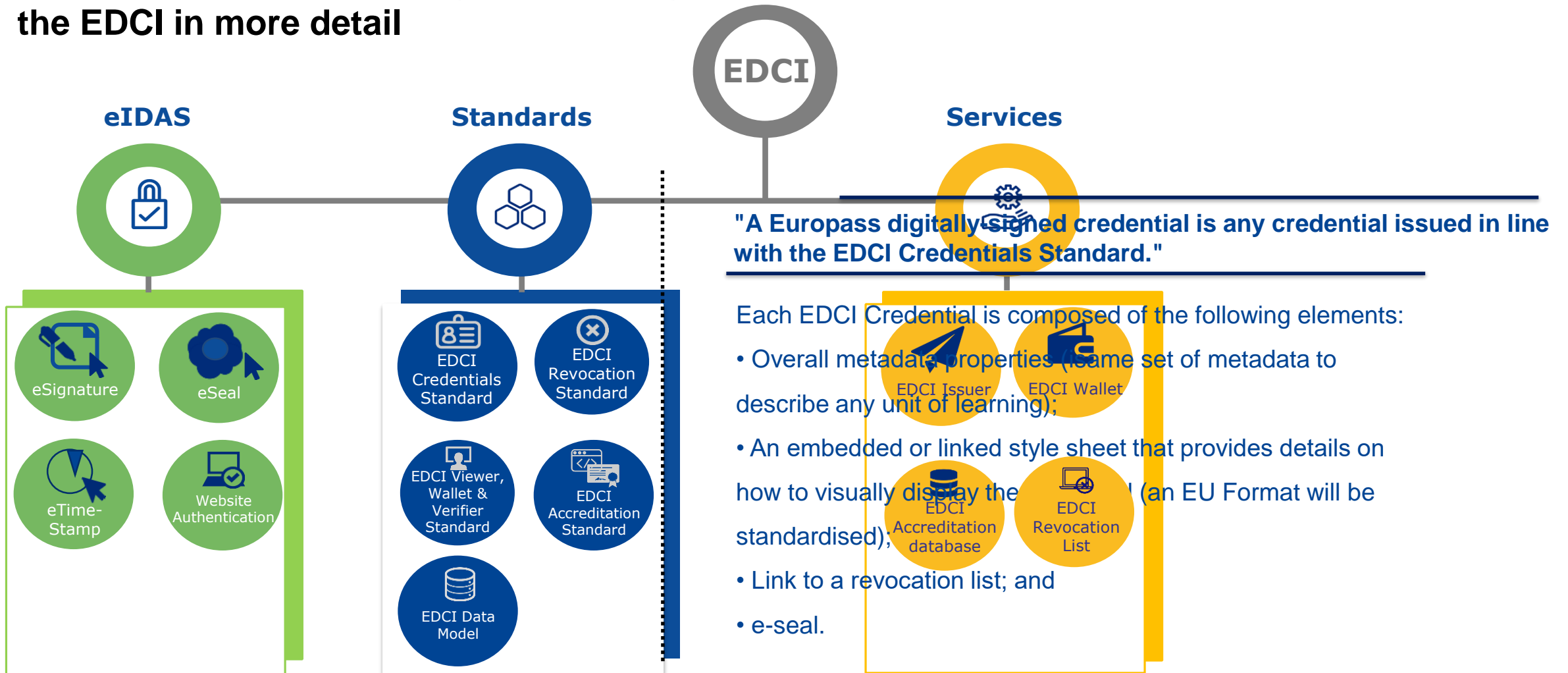
Framework for digitally-signed credentials

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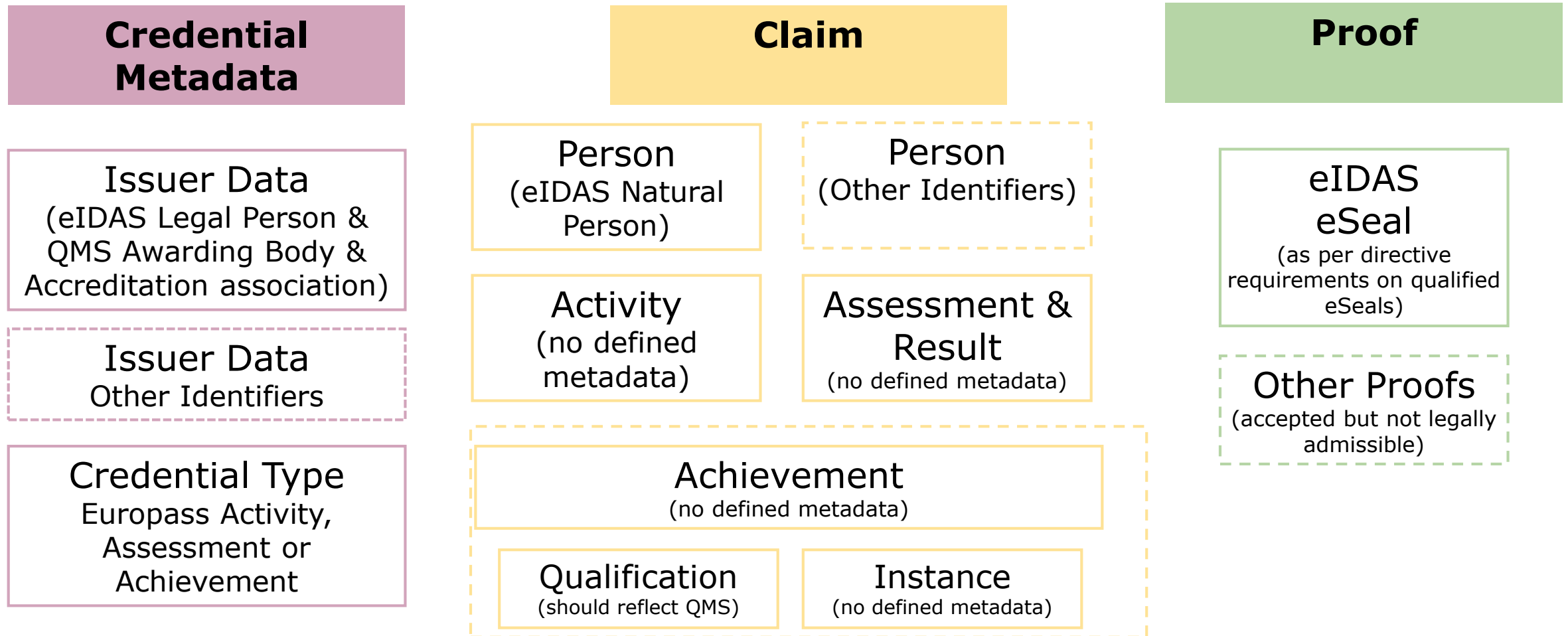


Framework for digitally-signed credentials

the EDCI in more detail



Europass Verifiable Claims: A High Level Structure





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Framework for digitally-signed credentials

the EDCI in more detail



eIDAS



Standards



Services

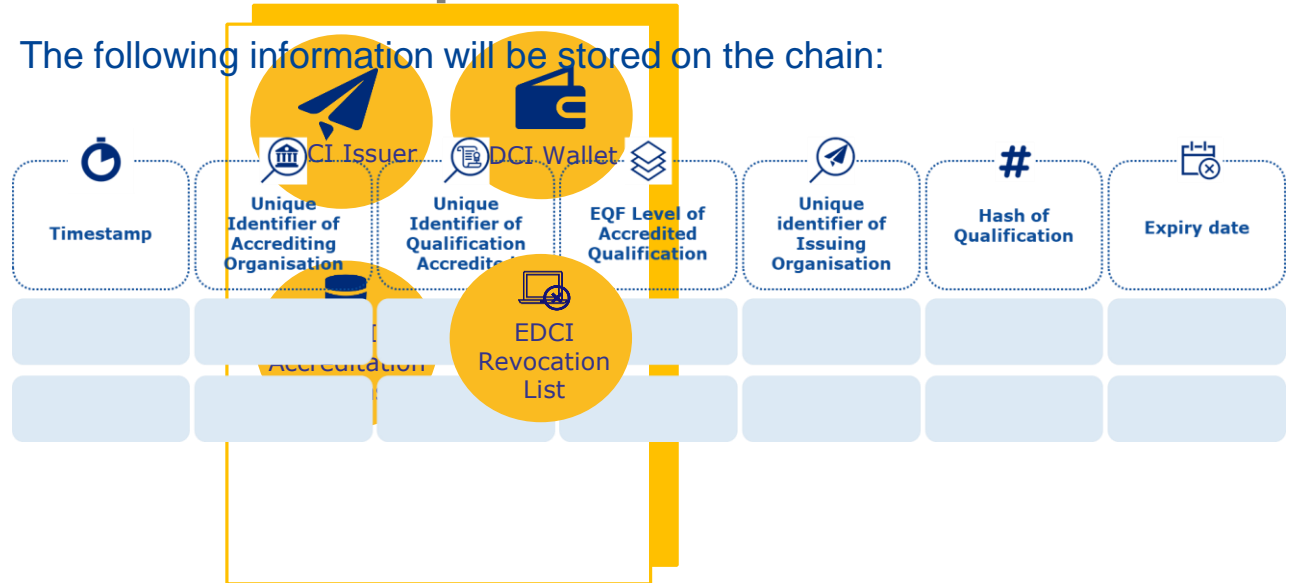


- eSignature
- eSeal
- eTime-Stamp
- Website Authentication
- eDelivery

- EDCI Credentials Standard
- EDCI Revocation Standard
- EDCI Viewer, Wallet & Verifier Standard
- EDCI Accreditation Standard
- EDCI Data Model

"EDCI Accreditation Database is a list of every accredited qualification in Europe, stored on a purpose-built blockchain."

The following information will be stored on the chain:





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Framework for digitally-signed credentials

the EDCI in more detail



eIDAS



Standards



Services



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“Information is submitted to the EDCI Accreditation Database via the Qualifications Dataset Register.”

The national qualifications authority can submit the list via the already established procedures for submitting qualification-data to ESCO.

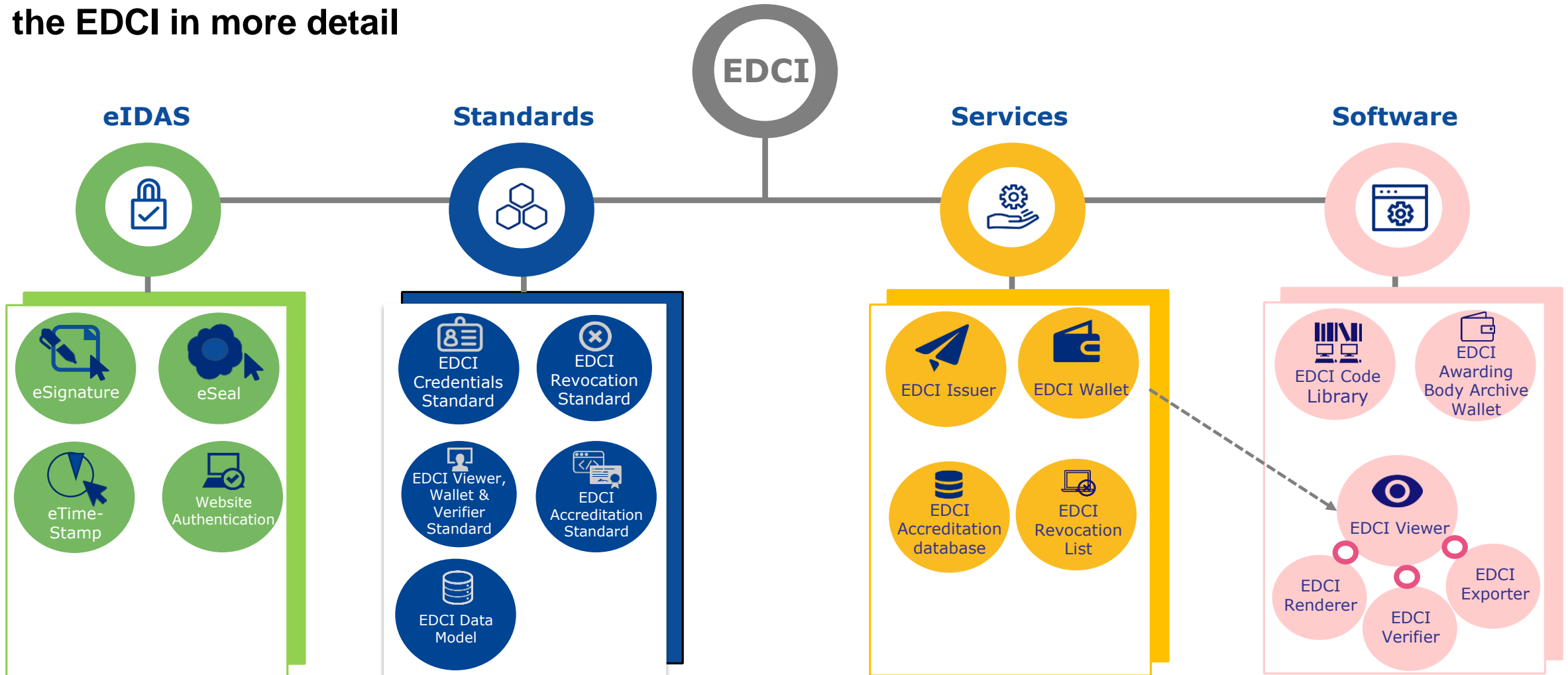




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the EDCI in more detail





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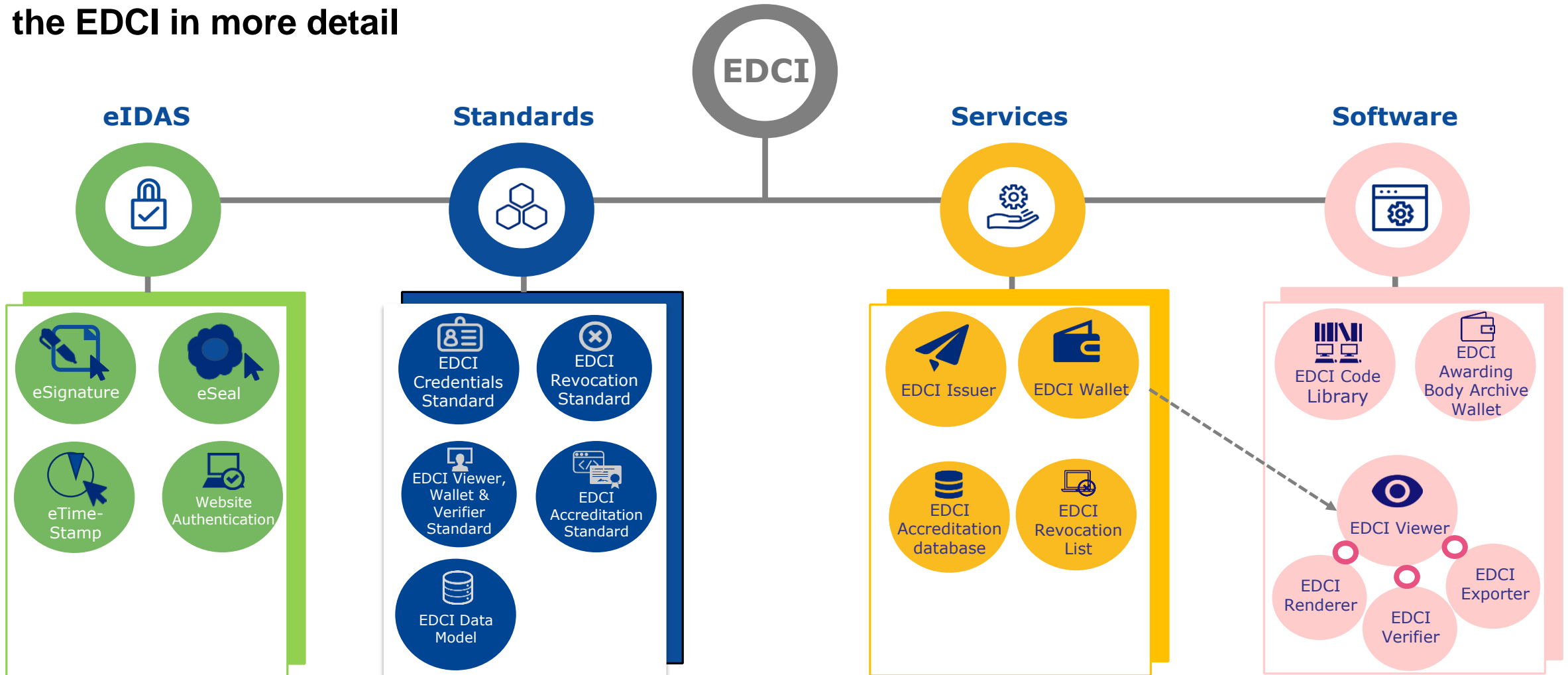




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Commission

Framework for digitally-signed credentials

the EDCI in more detail





European Commission

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eIDAS



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Services

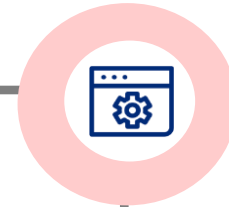


Credentials may be revoked due to :

- (1) error
 - (2) withdrawal of the credential by the issuing organisation,
- or
- (3) annulment of the credential by a competent authority.

- EDCI Issuer
- EDCI Wallet
- EDCI Accreditation database
- EDCI Revocation List

Software



- EDCI Code List
- EDCI Awarding Body Archive Wallet
- EDCI Viewer
- EDCI Renderer
- EDCI Verifier
- EDCI Exporter



European Commission

Framework for digitally-signed credentials

the EDCI in more detail



eIDAS



- eSignature
- eSeal
- eTime-Stamp
- Website Authentication

Standards



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Services



The Awarding Body Wallet provides an interface for the

Awarding Body to manage already issued credentials:

- archive of issued credentials;
- re-issue of credentials; and
- revocation of credentials.

- EDCI Issuer
- EDCI Wallet
- EDCI Accreditation database
- EDCI Revocation List

Software



- EDCI Code Library
- EDCI Awarding Body Archive Wallet
- EDCI Viewer
- EDCI Renderer
- EDCI Verifier
- EDCI Exporter

WHAT THE EDCI IS

- a standardised format for digitally certifying and attesting learning, irrespective of its source, in a secure way;
- a mechanism for the credential owner to store and share records of their own learning;
- a set of tools to enable the implementation of the standard; and
- a facilitator of credential interoperability.

WHAT THE EDCI IS NOT

- a new way of describing learning – it is entirely based on existing recognition instruments;
- a mechanism for sharing information between educational institutions (e.g. for mobility);
- a platform for experimenting with new technology; or
- a set of rules for institutions or member states.

Framework for digitally-signed credentials

why adopt the EDCI?



Awarding
Bodies



Reduce the cost for issuing secure credentials



Eliminate administration of verifying credentials



Decrease costs in verifying records as part of admissions processes

Framework for digitally-signed credentials

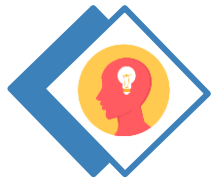
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Member
States



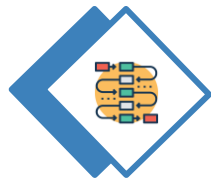
Accreditation
Bodies



Contribute to significant efficiency gains from standardised structures for all credentials



Reduce workload for ENIC/NARIC points



Establish a single source of information for accredited qualifications in Europe, which may reduce the scope of diploma mills to defraud person

Framework for digitally-signed credentials

why adopt the EDCI?



Employers



Automating the verification of the authenticity of credentials



Automating the evaluation of the skills and experience represented by credentials



Countries that will participate in the pilot:



- Czech Republic
- Germany
- Estonia
- Greece
- Croatia
- Italy
- Luxembourg
- Netherlands
- Portugal
- Slovenia
- Slovakia
- Spain

Thank you!



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#NewEuropass
@Adedopoulou
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Framework for digitally-signed credentials

Questions

