



Diplomas Track Deep Dive: Ensuring Interoperability

EBSI use case groups Joint workshop

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Topics for Today



Standards



Technology



Governance



Standards

ENSURING WE SPEAK
THE SAME LANGUAGE

Design Brief

for an

Effective Learning Standard





Addresses all Levels of Education



Aligned with European
Recognition Instruments

Captures
Formal, Non-
Formal &
Informal





Applicable to the
whole course lifecycle



Interoperable



Free & Open Source

Current Standards for Education

ELMO/EMREX

(Higher Education:
supporting transfer of
student data between
institutions)

Qualifications Metadata Schema / EQF

Learning Object
Metadata
(learning objects)

Schema.org Courses
(course catalogues)

PLOTEUS Learning
Opportunity data
model (course
catalogues)

Open Badges
(credentials)

ISO / CEN
Standards

No Existing
Standard
fully reflects
lifelong learning





A new Meta-Model for Interoperability

Extend the scope, purpose and use
Qualifications Metadata Schema
(legislative basis)

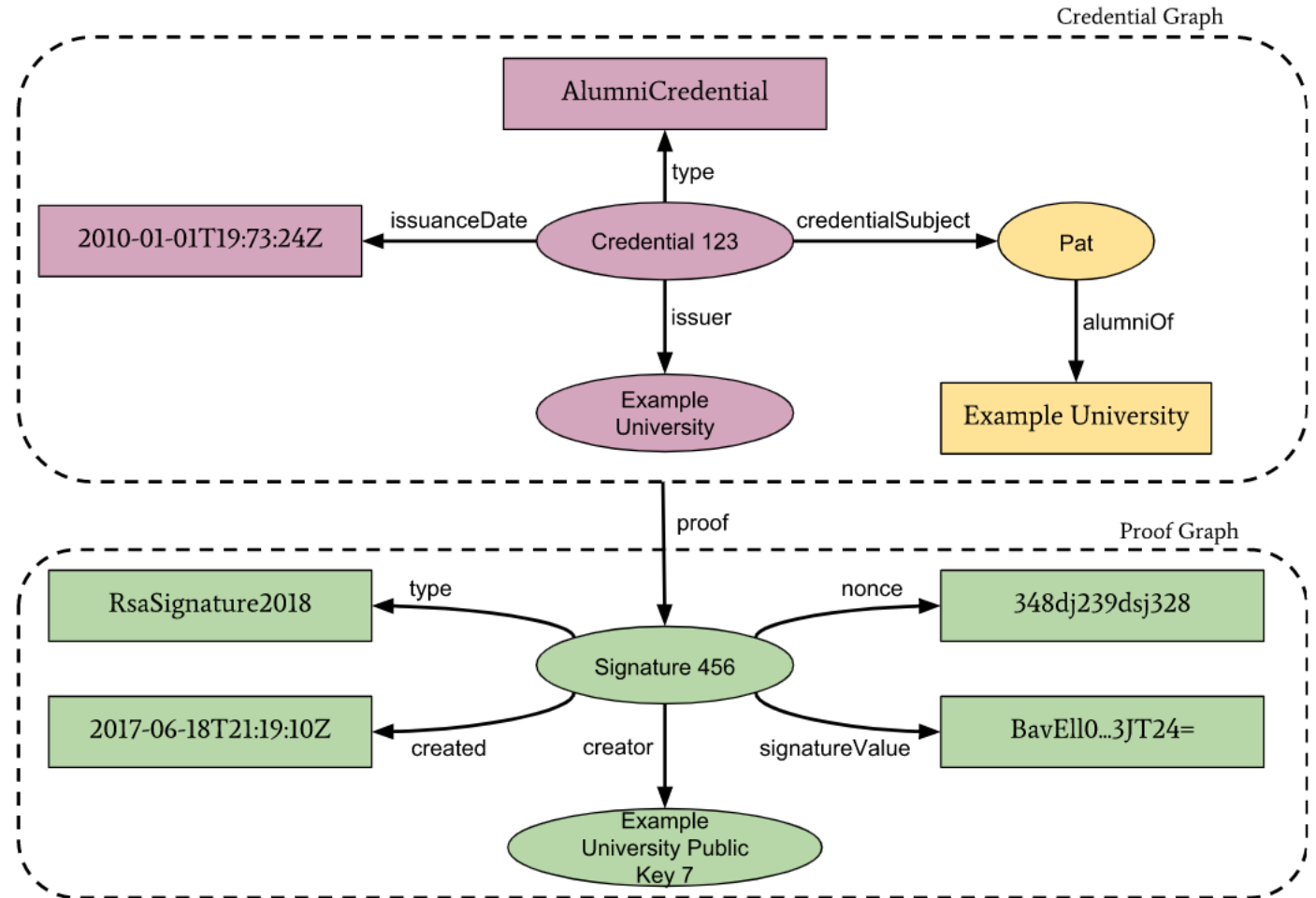
Europass Learning Data Model

Europass Claims

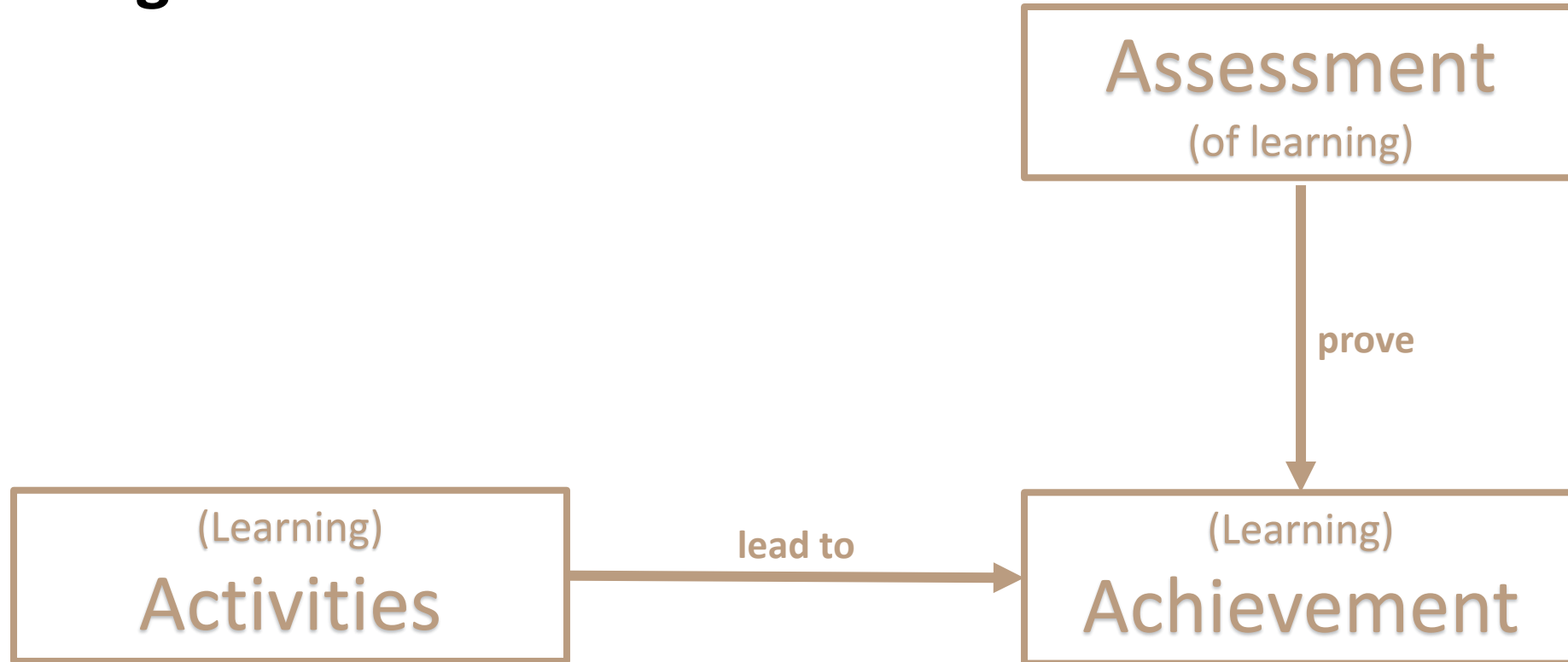
are



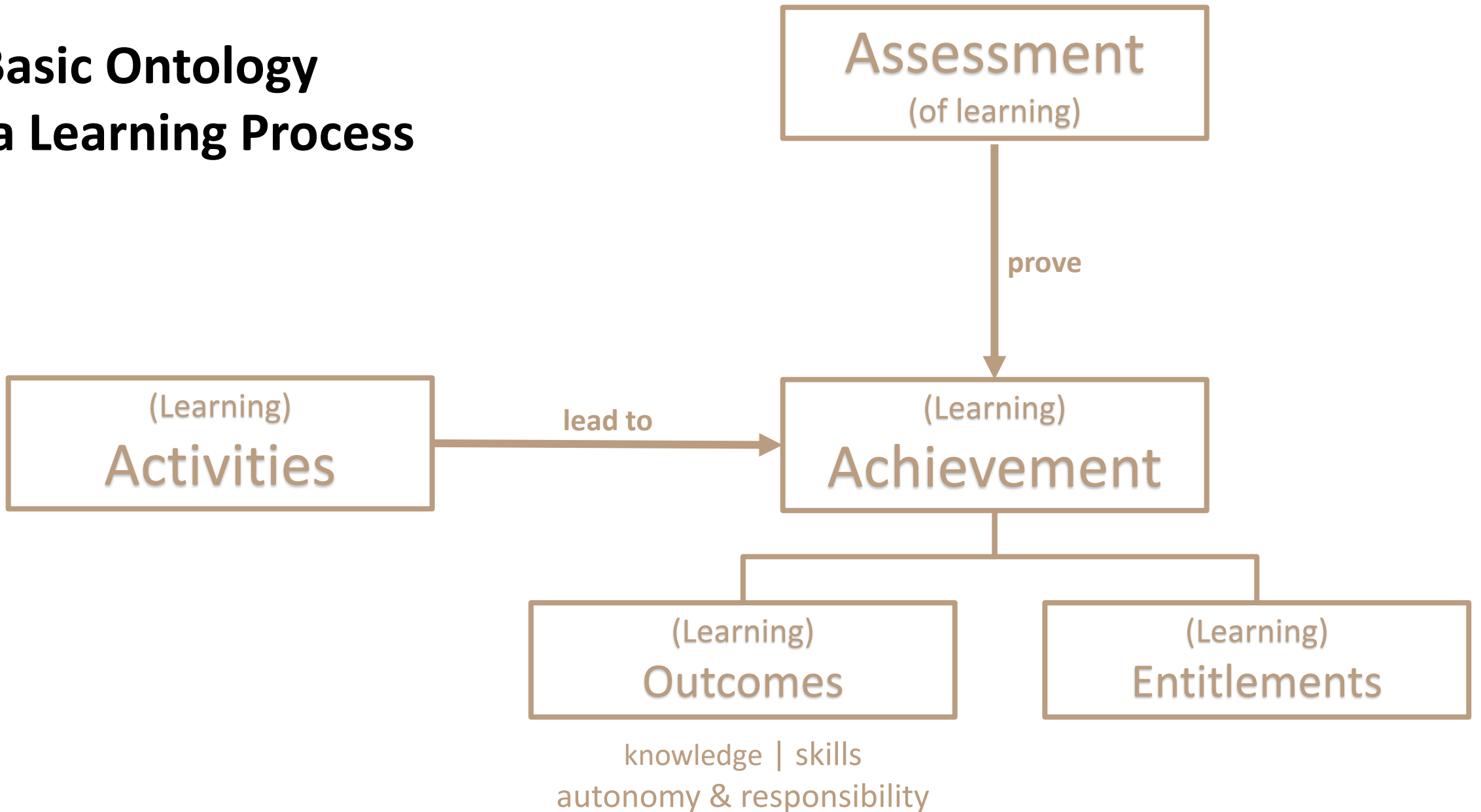
Verifiable Credentials



A Basic Ontology of a Learning Process



A Basic Ontology of a Learning Process

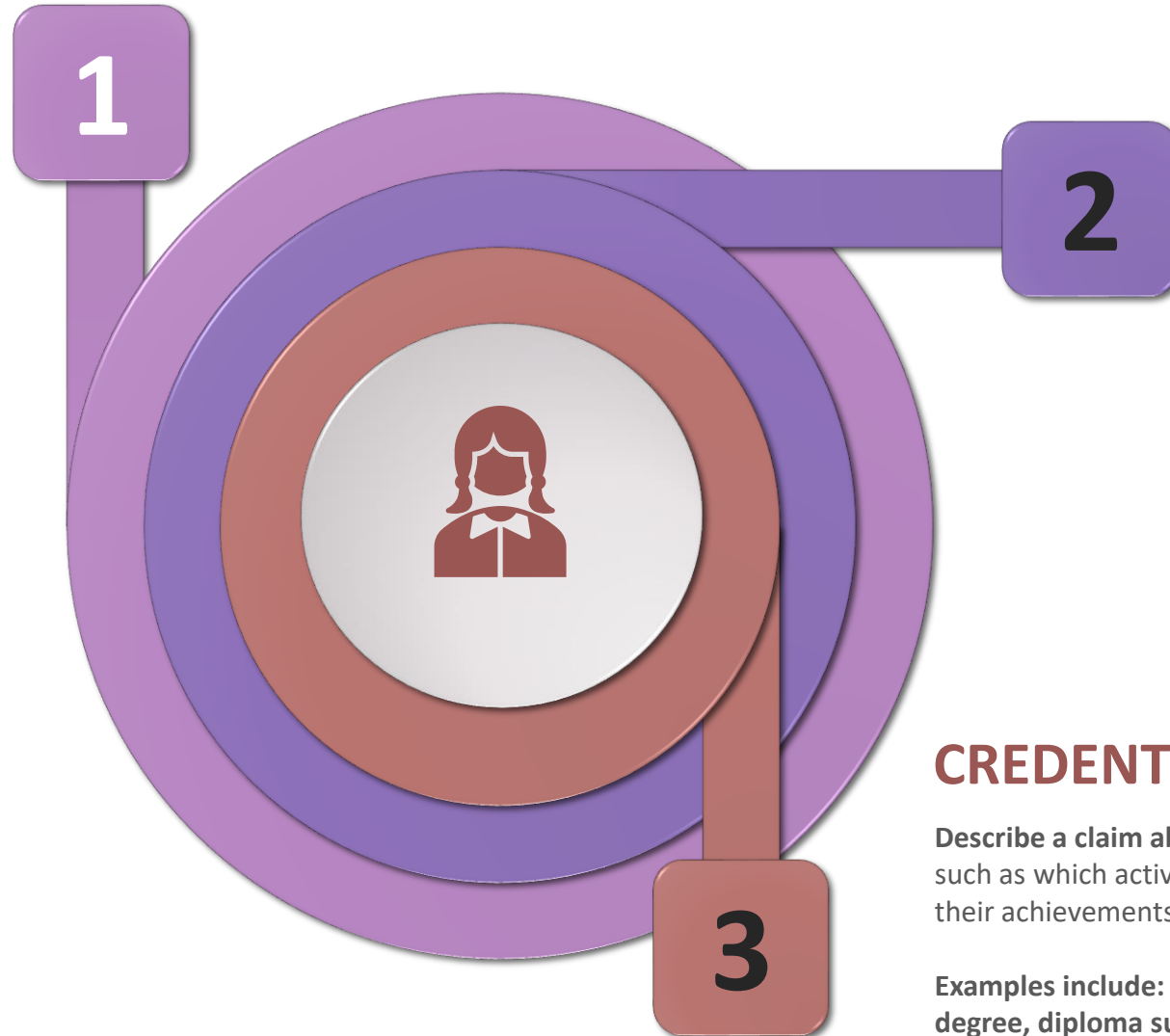


A Basic Ontology of a Lifecycle Concepts

SPECIFICATIONS

specify what can be learned, what can be done and how it can be assessed.

Examples include:
occupational profiles, competence frameworks, curricula, skill classifications



OPPORTUNITIES

Describe an offer by an **organization** to direct an activity which leads to a learning outcome (proven by an assessment)

Examples include:
courses, apprenticeships, voluntary experiences, etc.

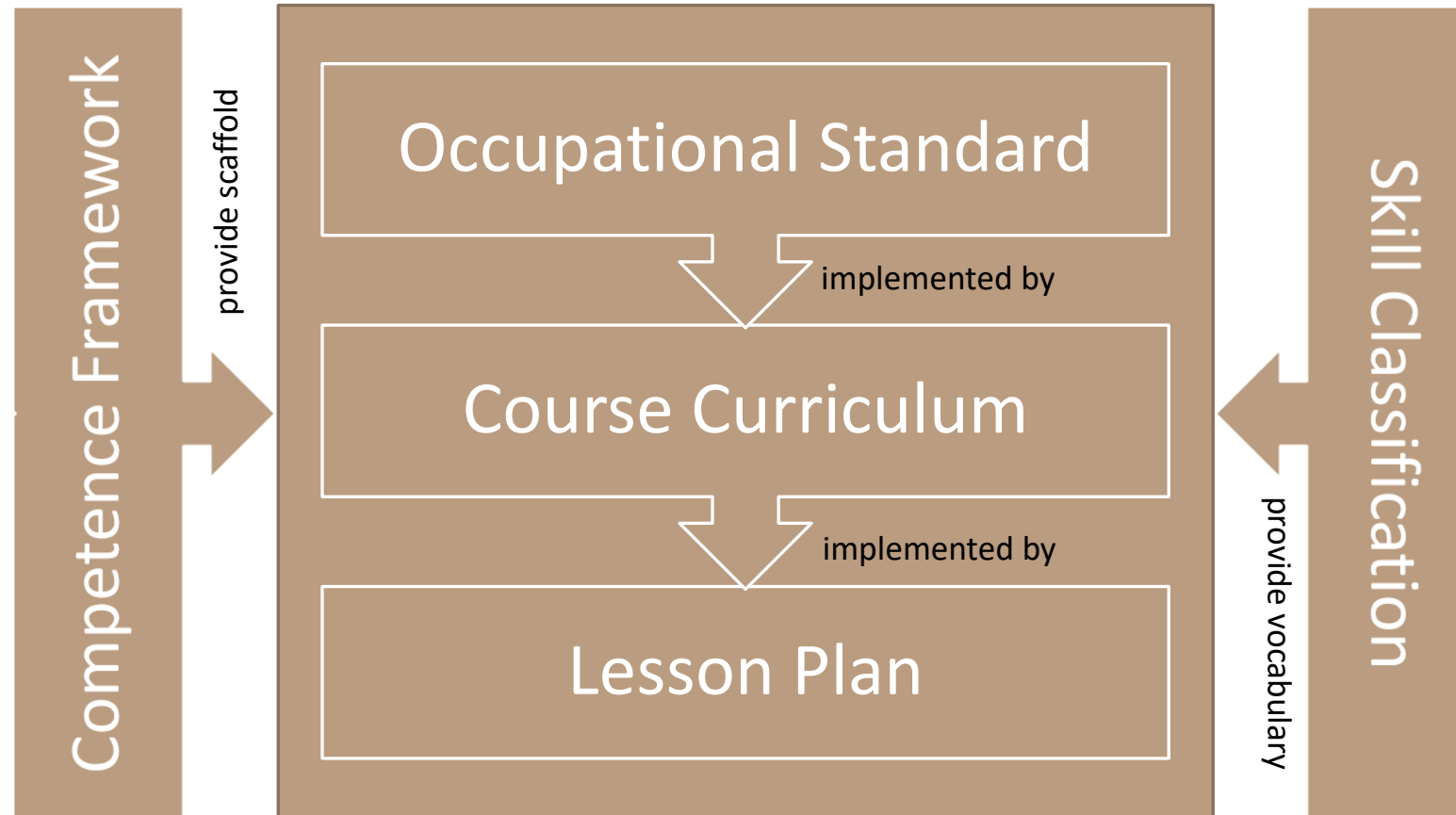
CREDENTIALS

Describe a **claim about an individual** such as which activities they have done, and their achievements proven by assessments.

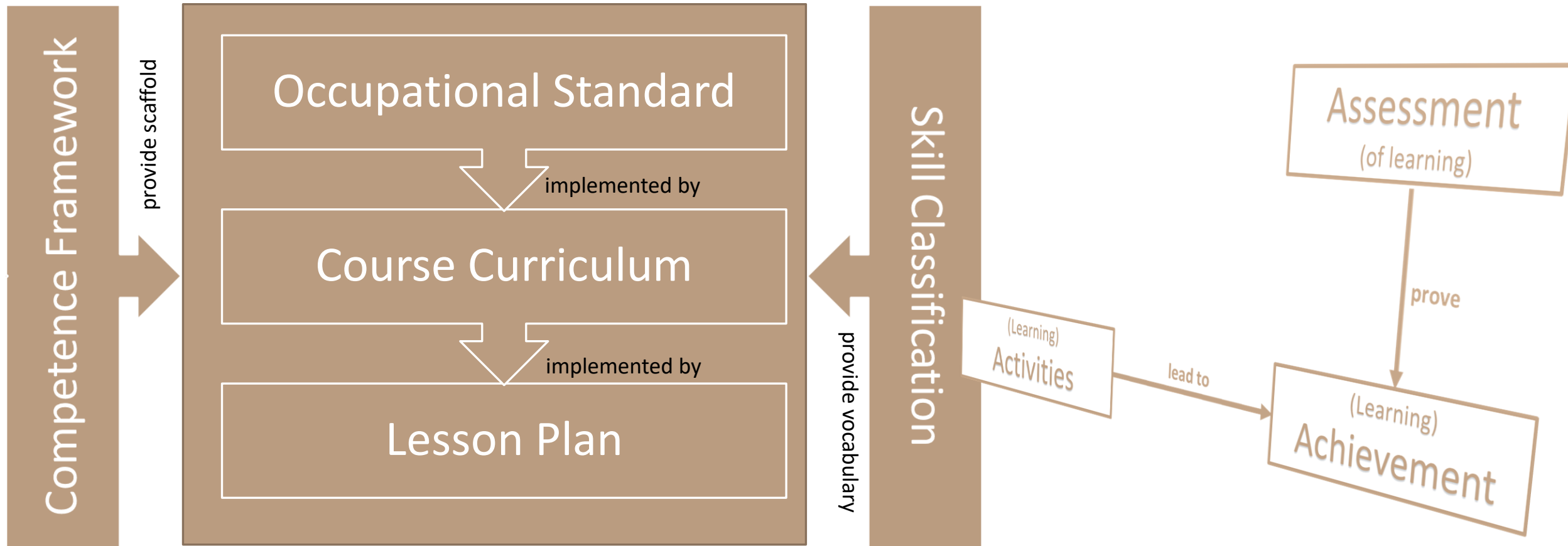
Examples include: attendance certificate, degree, diploma supplement, letter of recommendation

Specifications

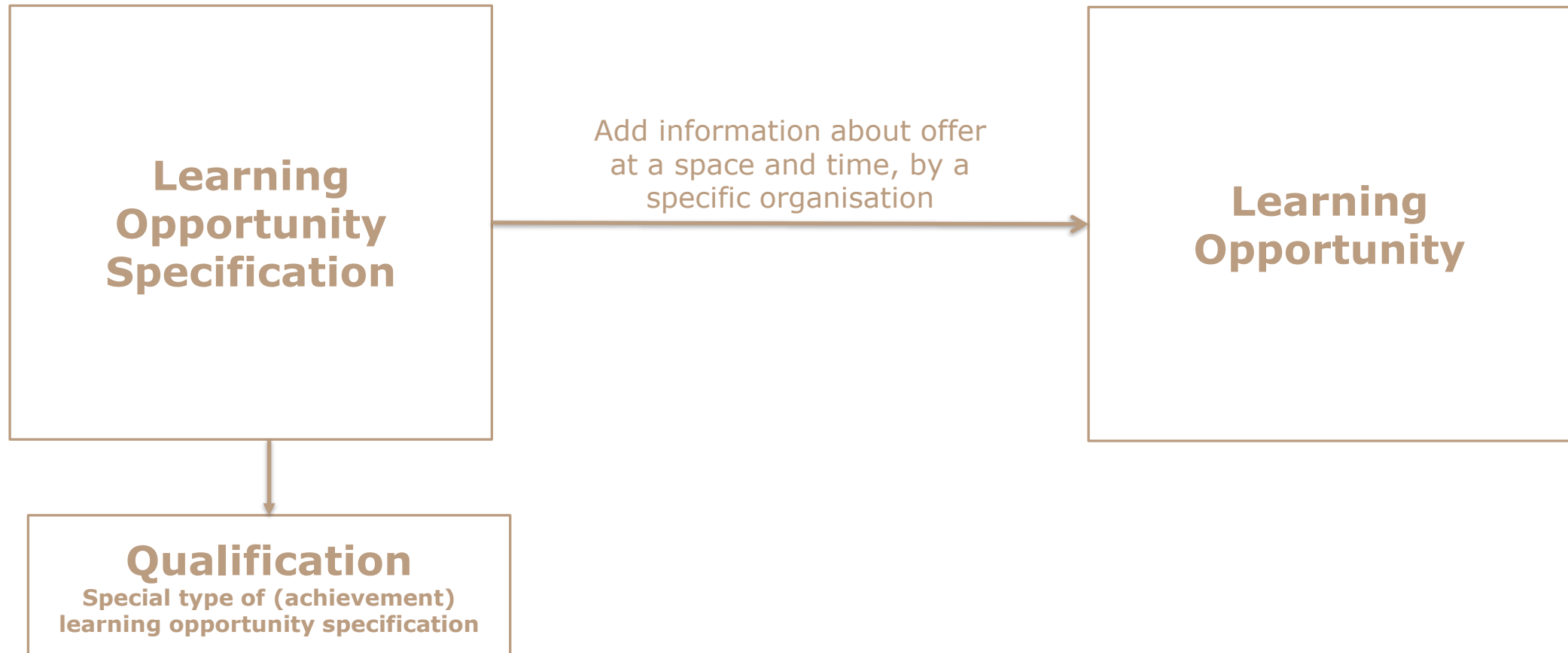
are interrelated and build on each other...



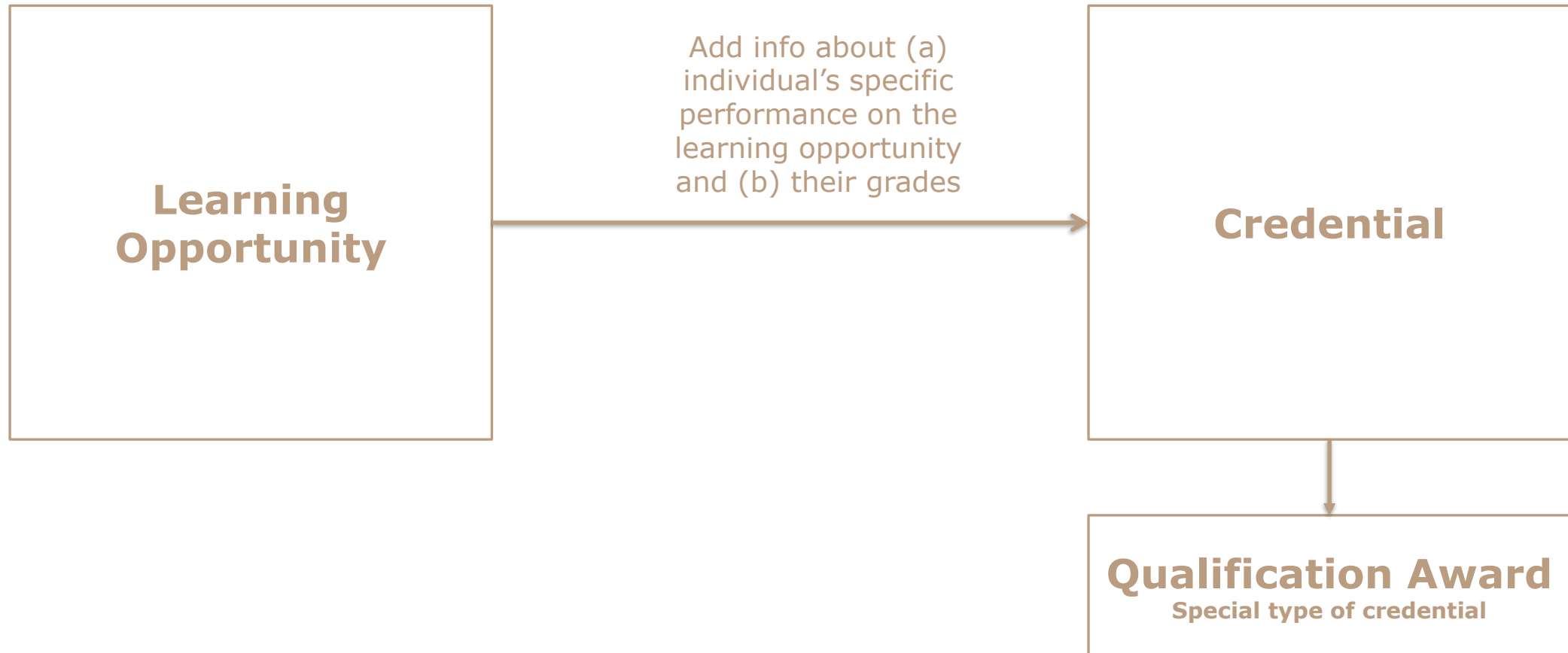
...always using the same basic concepts



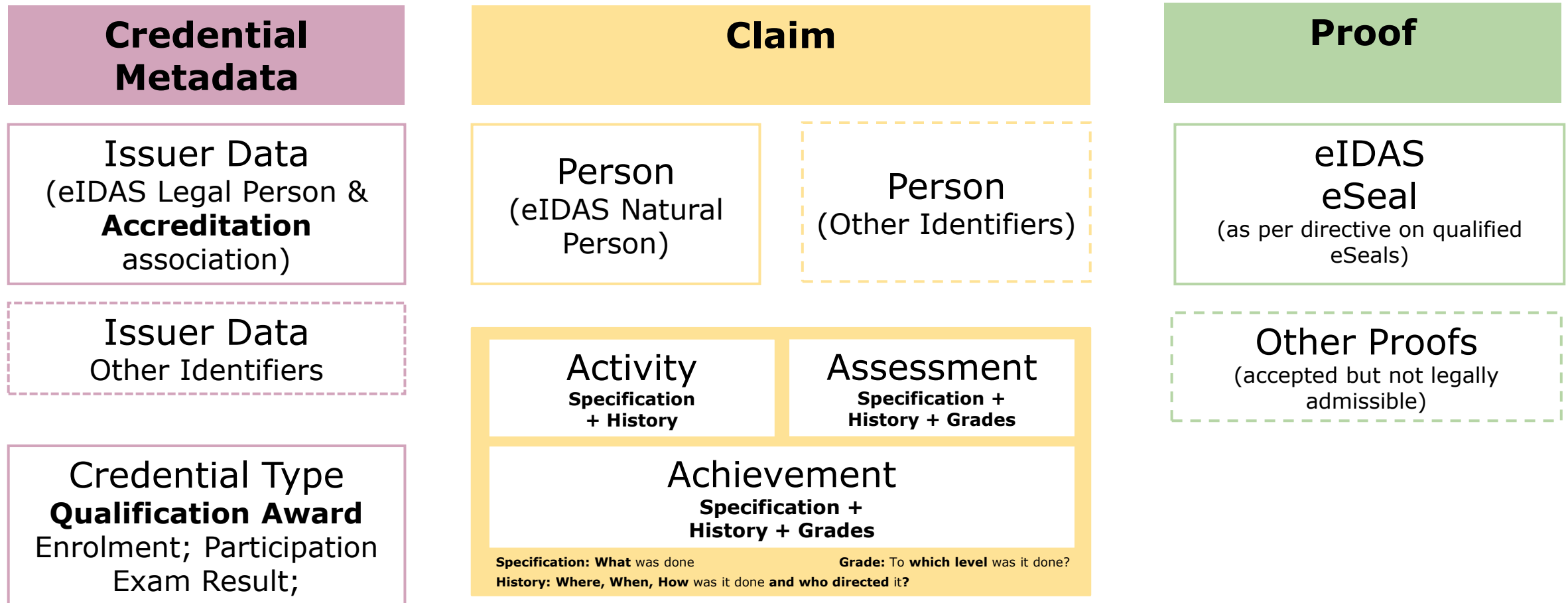
Learning Opportunities



Credentials



Europass Verifiable Claims: A High Level Structure



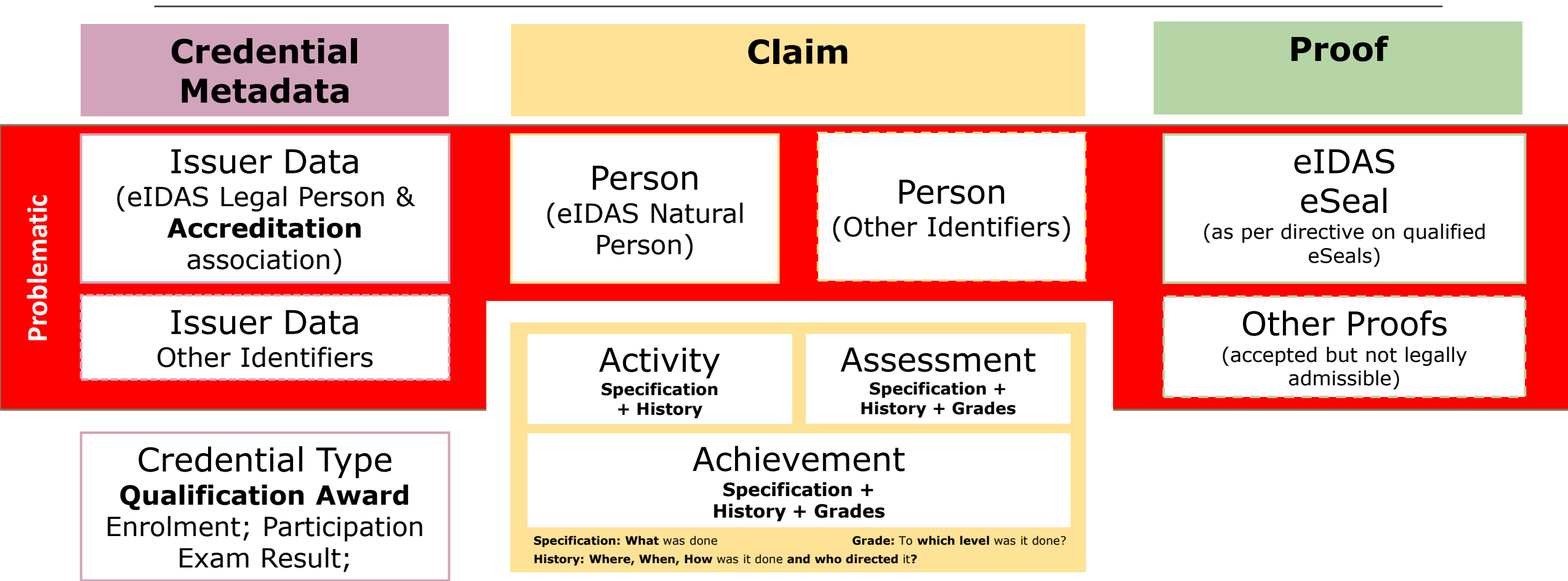


Technology

CREATING A RELIABLE TRUST
INFRASTRUCTURE



Europass Verifiable Claims: A High Level Structure



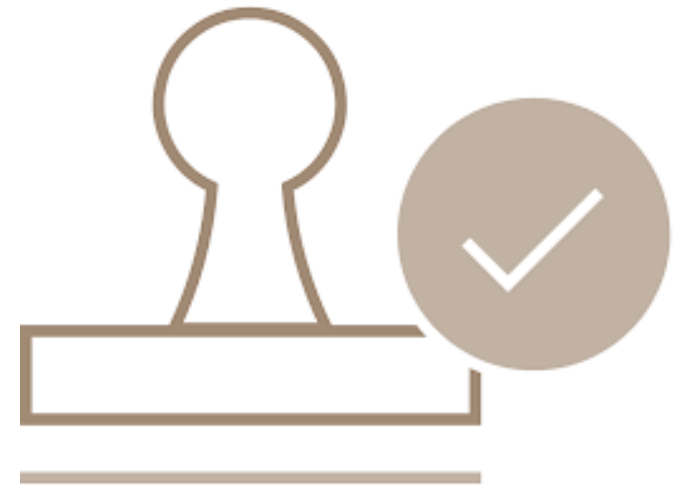
Organisational Identifiers

Require Organisational eID: which can **cost up to €600/year**

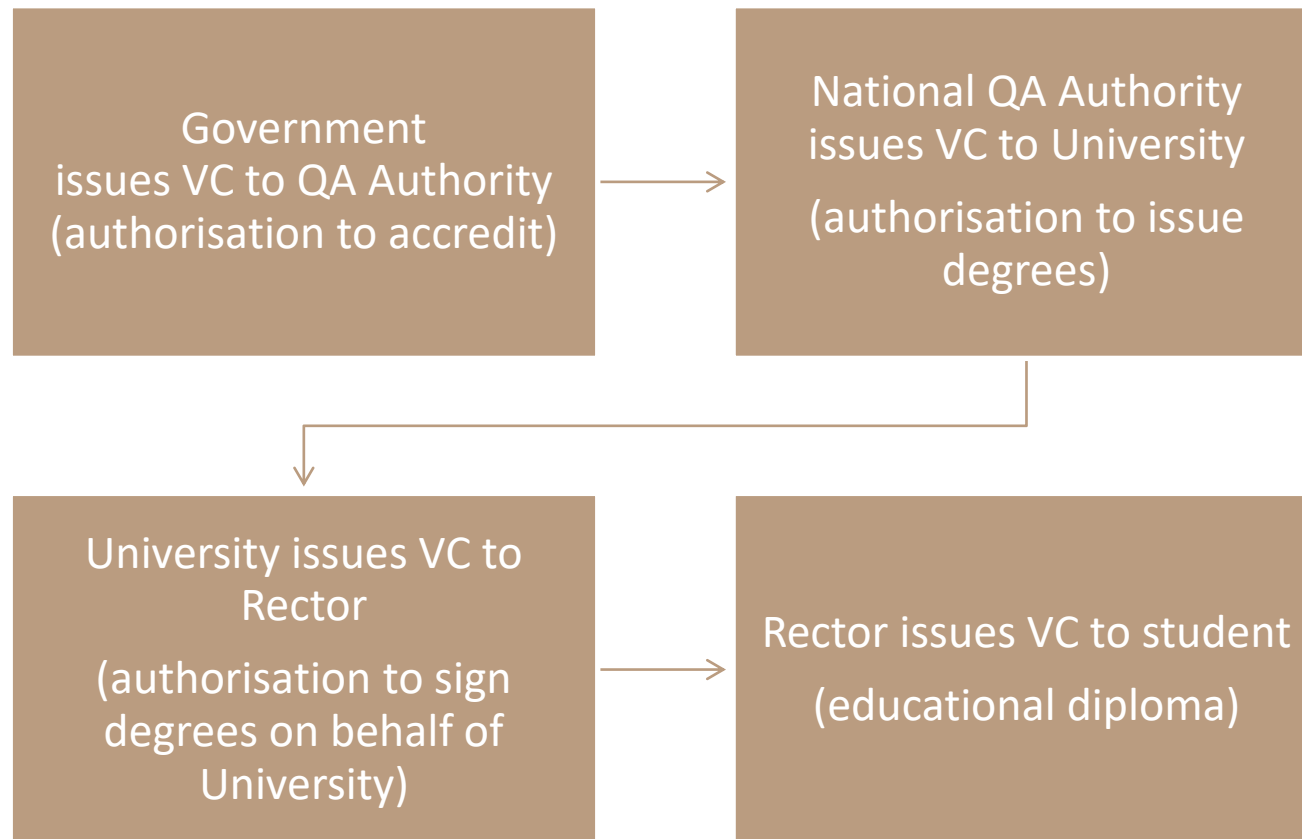
No in-built way to **link to organisation to natural person**:
large organisations must manage permissions to physical device

Organisational eID says nothing about Accreditation as an Educational Organisation

Multiple Education-Specific Identifiers which are generally not interoperable.



Accreditation via Verifiable Credentials and DIDs



Advantage:

No need to collect accreditation data from MS.

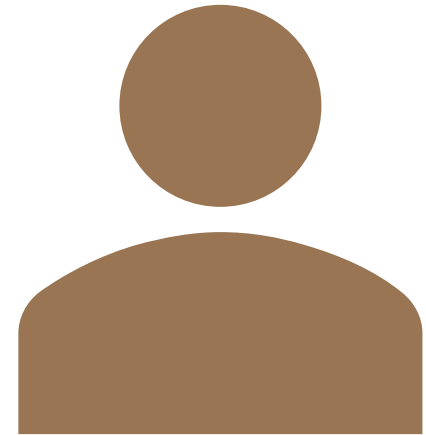
Only requires the **root** to be in a verifiable registry. The rest of the authorisations can be done through claims with each claim embedding the claim above.

Personal Identifiers

Not Feasible to issue diplomas to **verified** national eIDs.

Use of **only** default metadata fields from eIDAS produces multiple identification exceptions (name changes etc).

Decentralised Identifiers linked to eIDs may provide a more automatable, easier to use, and persistent workflow.

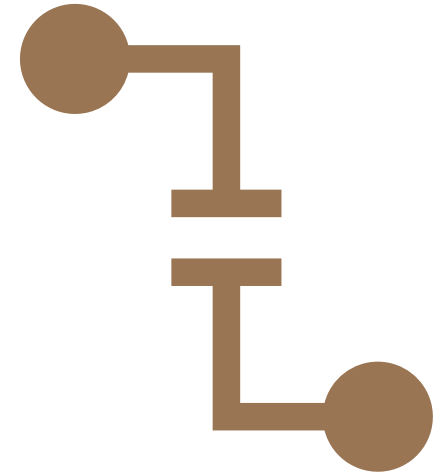


PKI-based Proofs

Diplomas signed via PKI need to be resigned approx. every 5-7 years.

For user-convenience this requires use of cloud-based resigning services.

Cloud-dependency makes self-sovereignty impractical

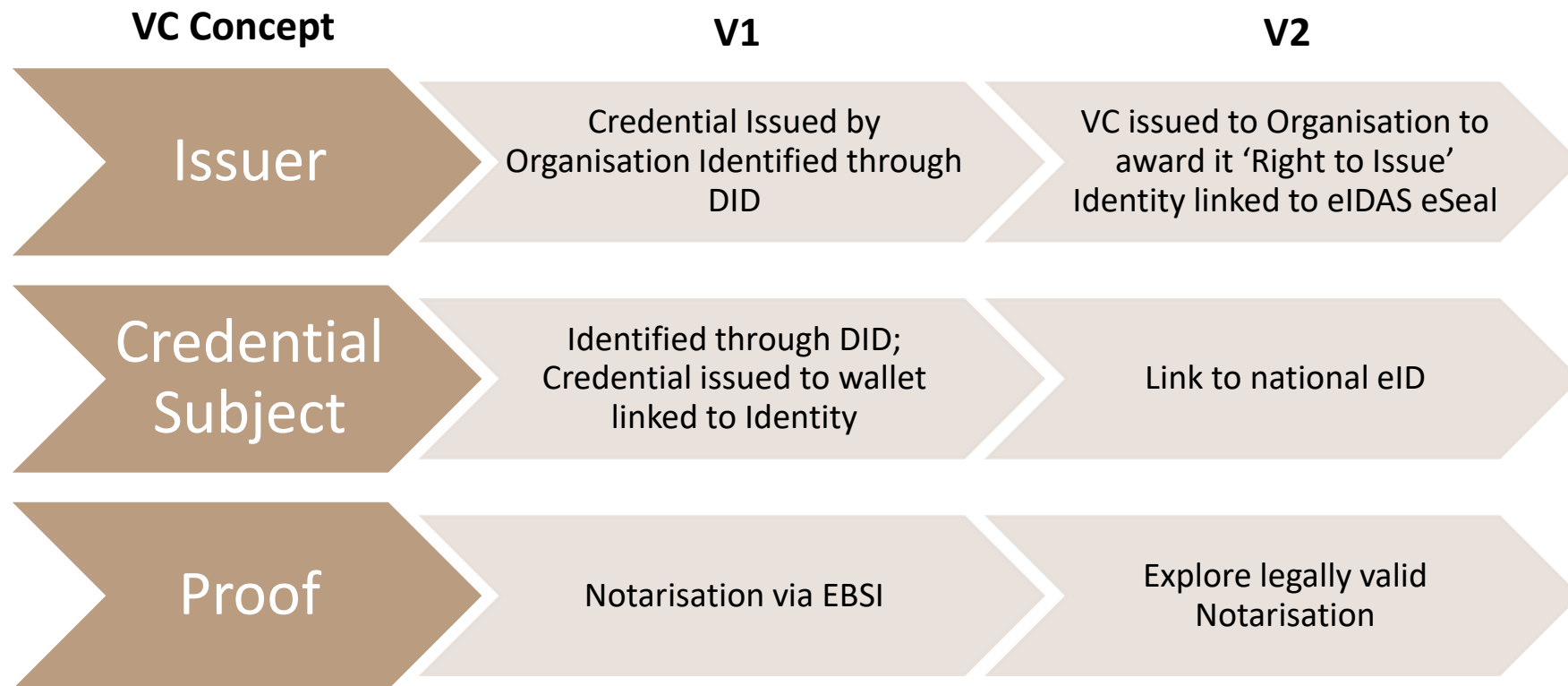


NOTARISATION
ALLOWS AN
IMMUTABLE
GUARANTEE OF
AUTHENTICITY.

EBSI- Notarisation

obviates the need for e-signing

Linking these Ideas to the EBSI Roadmap





Governance

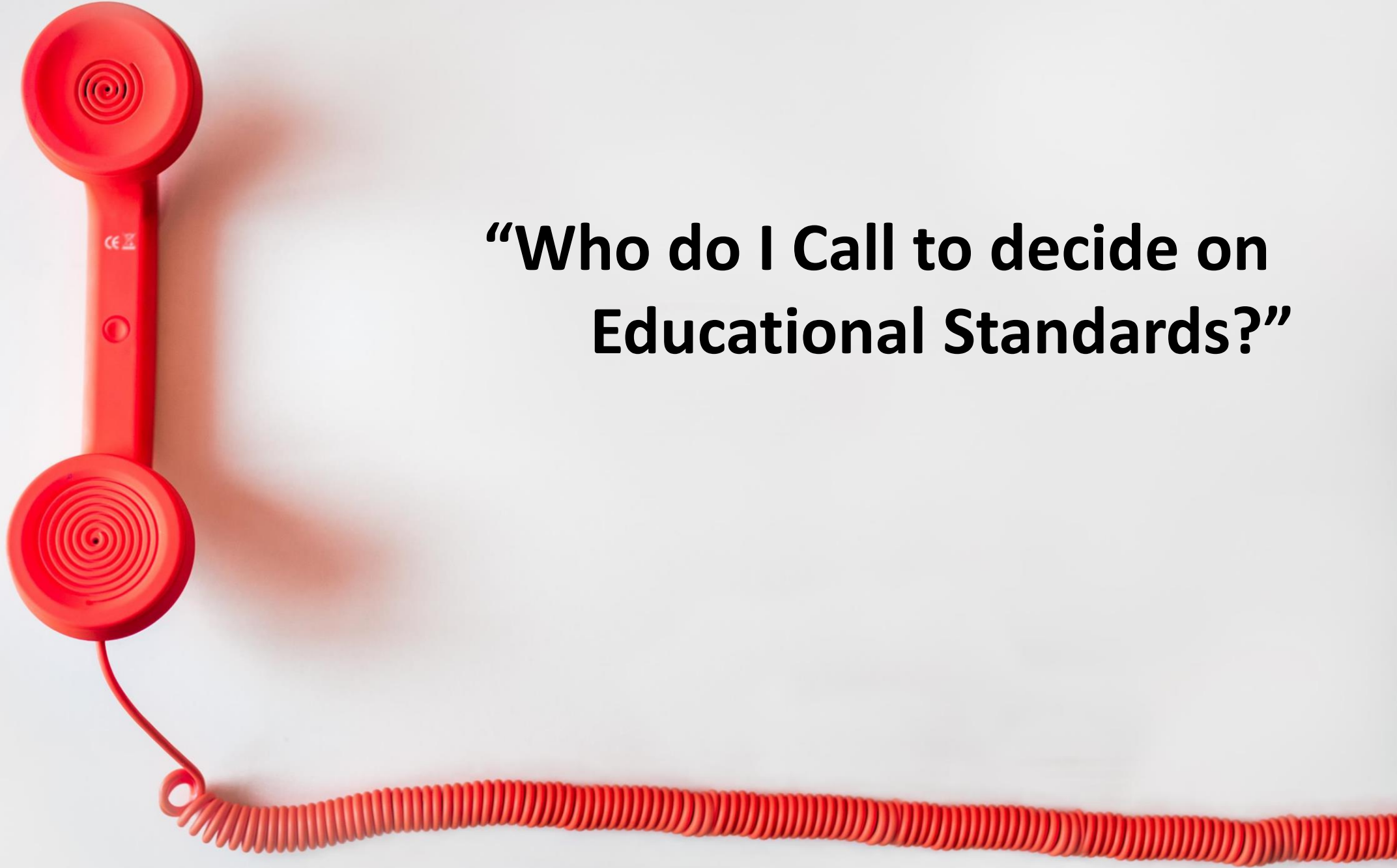
CREATING A RELIABLE TRUST
INFRASTRUCTURE





Efforts for Self-Sovereign Identity and Verifiable Credentials need to be connected through **Educational Standards**

CONNECTING EDUCATIONAL
DATABASES IS ABOUT MUCH
MORE THAN IDENTITY



**“Who do I Call to decide on
Educational Standards?”**

Some principles for a governance system

Stakeholder-Led

Member-State Endorsed

Publicly Consulted

Long-Term Governed

Brief to Manage Standards for

Organisational Identifiers

Personal Identifiers

Accreditations

Proofs

Data Interchange between Institutions

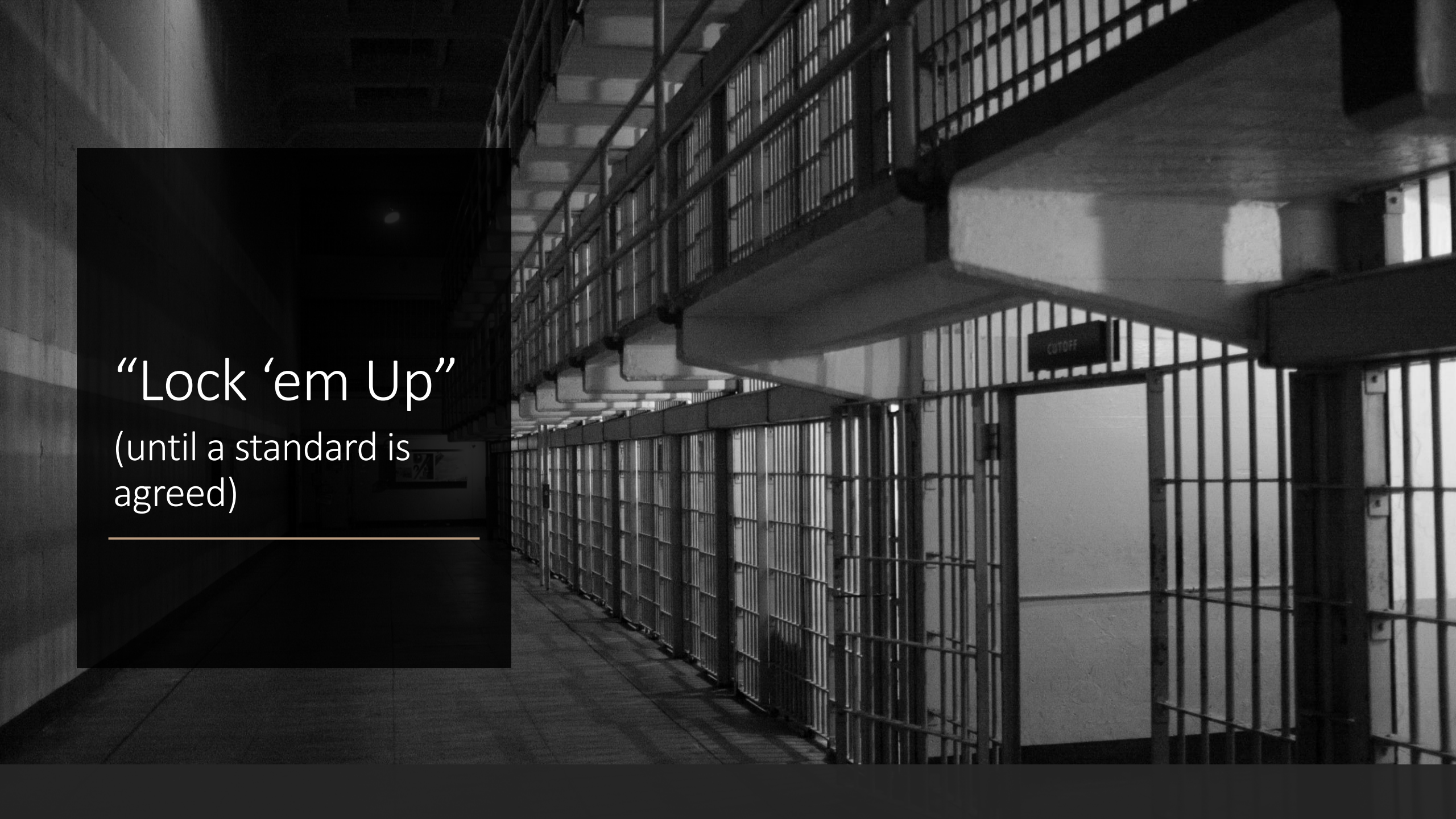
Data Interchange between Institutions /

Students / Employers

Data Interchange between MS

Courses, Skills, Learning Outcomes,

Achievements



“Lock ‘em Up”
(until a standard is
agreed)

CUTOFF



Need for a Cross- Sectoral Approach

Identity, Technology, Education,
Employment stakeholders and
regulators need to come together
for real impact



Thank You

QUESTIONS?