



A screenshot of a web browser displaying the URL https://pilot.eduxs.eu. The page title is "Mapping the Digital Education Ecosystem" with a subtitle "Ensuring understanding of Europe's digital education landscape through stakeholder mapping, projects, and standards." Below the title is a search bar with the placeholder text "Search Projects, Organisation, Services and more...". The search results are categorized into two sections: "Projects" (87 items) and "Organisations" (287 items). The "Projects" section includes a description: "Projects are initiatives that support education, linked to funding, goals, and the problems they solve, grouped by scope, type, and country." The "Organisations" section includes a description: "Organisations are institutions or groups working in the education sector, linked to their role in educational projects and standards. Categorisation on type and country." The browser's address bar and navigation icons are visible at the top.

# Internationale samenwerking voor standaarden

27 May 2024



**Npuls**

**SURF**

1. **Update Europese interoperability initiative (EDEH)**
2. **Update EduXS project**
3. **Welke overzichten hebben prioriteit?**

An initiative of  
the



European  
Commission

# Higher Education Interoperability Framework

June 2024

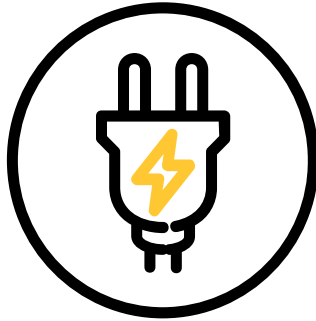
EUROPEAN  
DIGITAL  
EDUCATION  
HUB



# Bridging interoperability

... let's take this to higher education

Consider an adapter...



Many **different** standards, systems and technologies



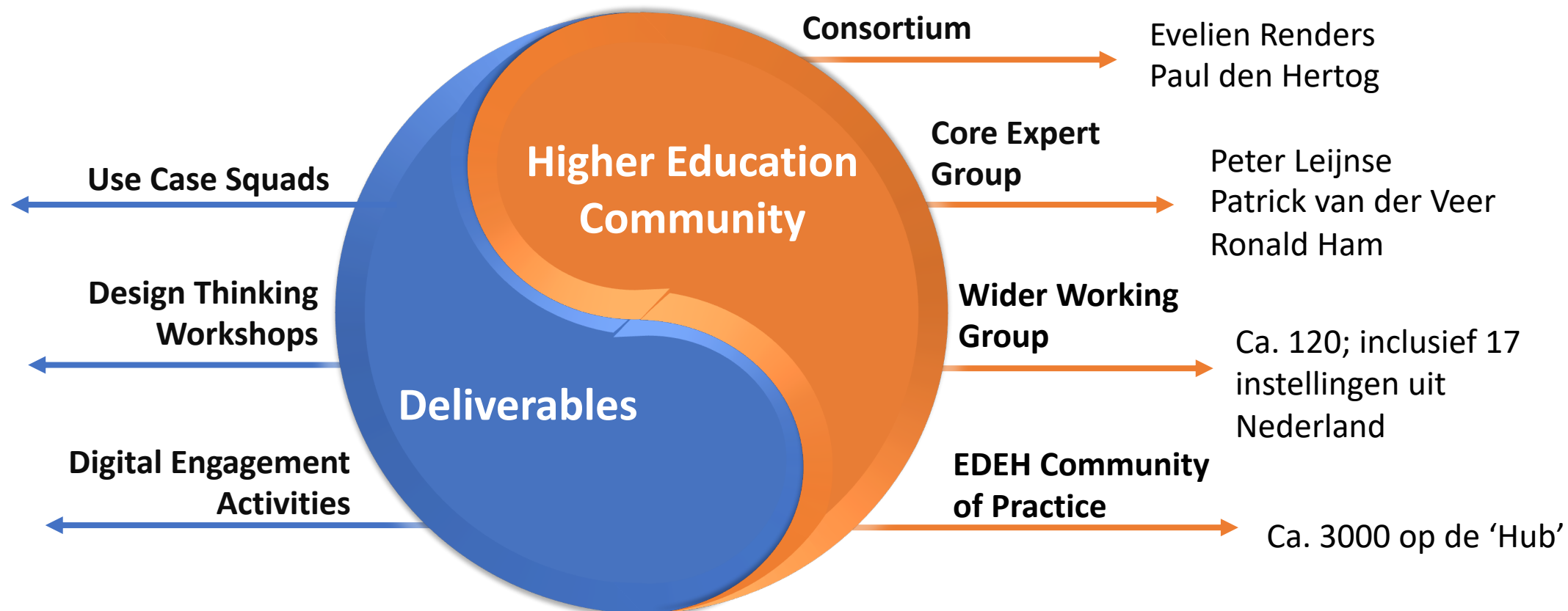
A **solution** that bridges existing systems



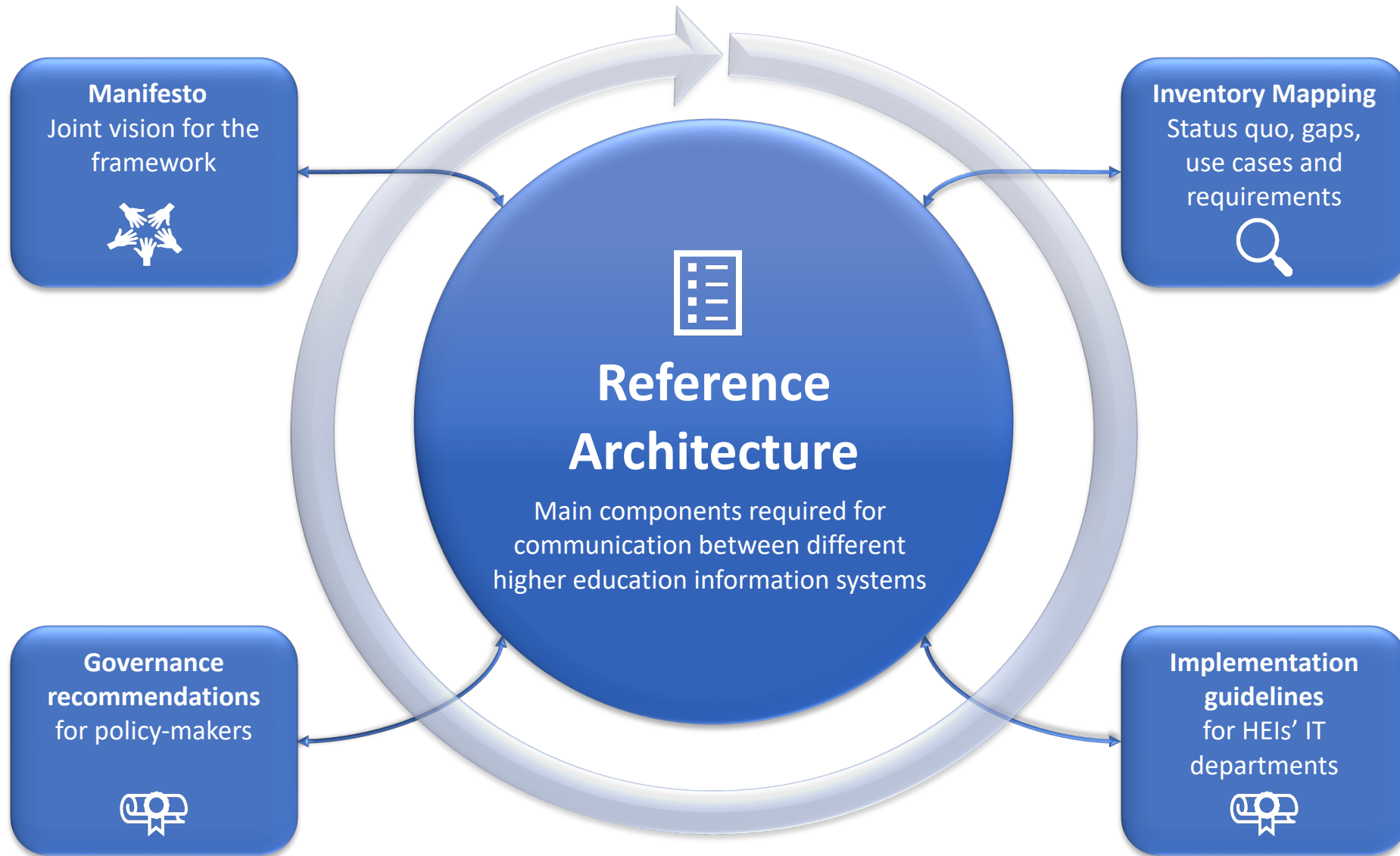
**60** EUAs with more than **500** higher education institutions, which use their own or other systems...

A standardised Framework to create a more interconnected, efficient, and inclusive European higher education landscape

# Our approach to design the framework



# What the project will deliver

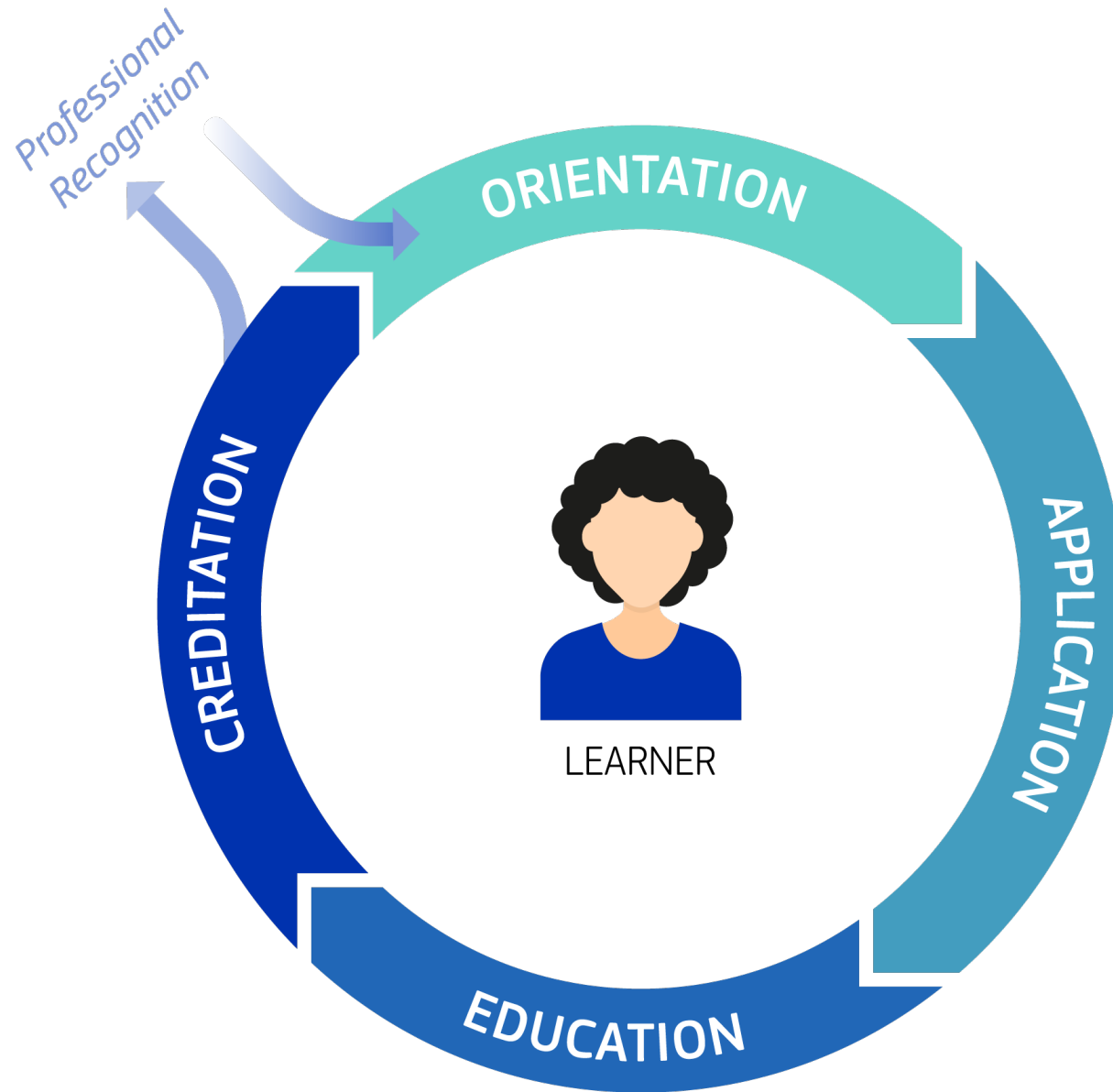


One learner  
Nine institutions

Meet Sam




# Sam's learner's Journey



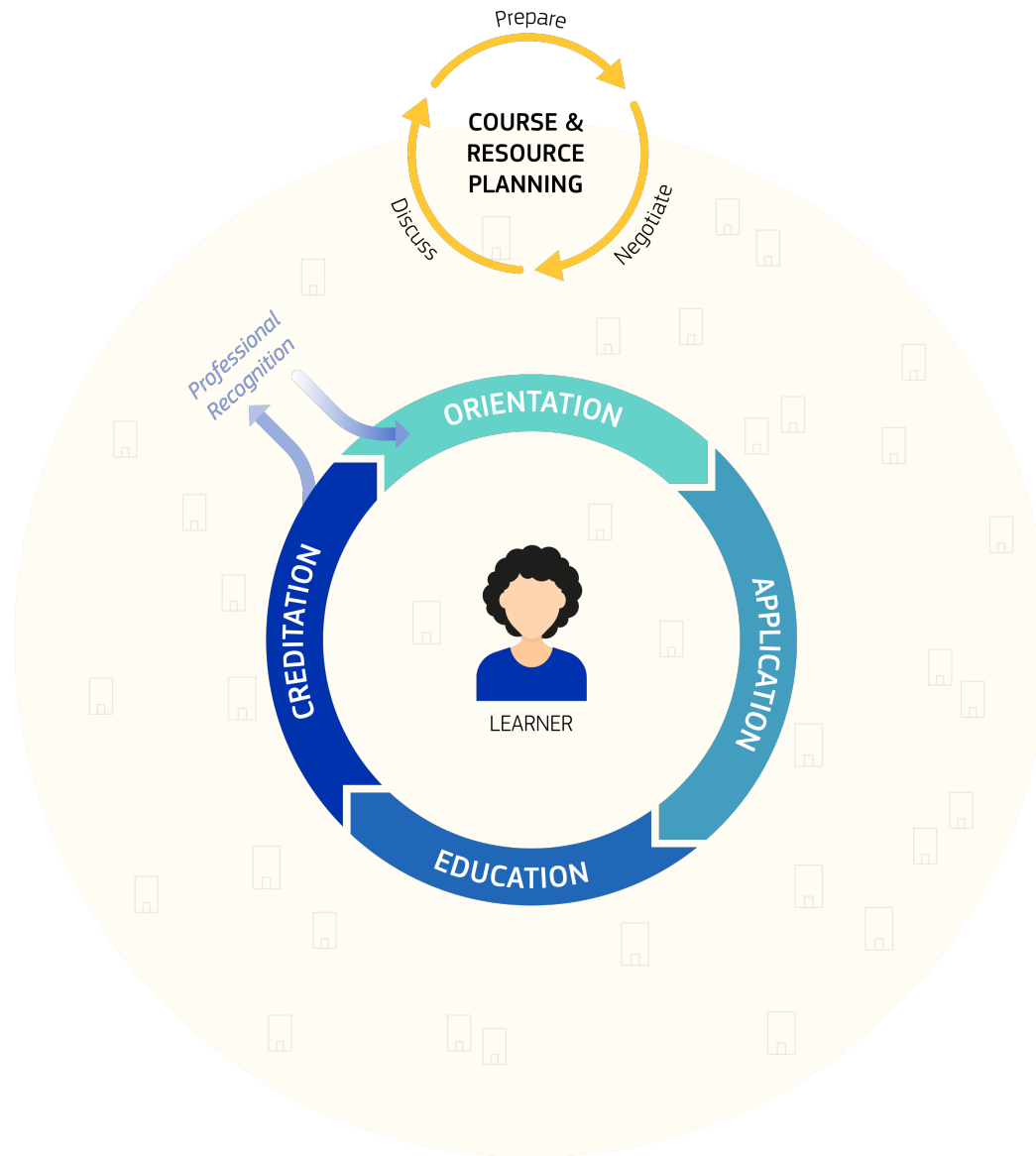
**LEGEND**

- Learner journey
- Enabling processes
- Use case (and phase it is associated with)
- Supporting use case (is not associated with a particular phase)
- Institution layer






 = Learner cycle for big and small learning opportunities: like a course, module or whole programme.




# The diagram



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## USE CASE 1

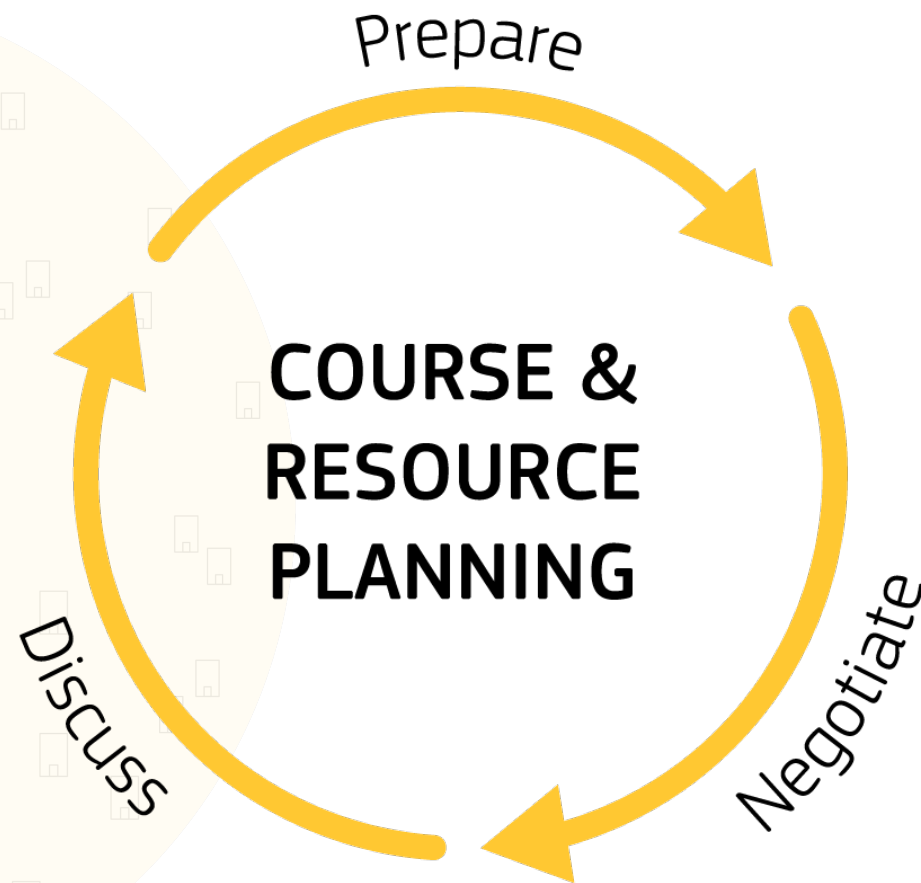
### Discover



Enhancing the visibility and comparability of diverse learning and mobility opportunities across HEIs, emphasising the importance of machine-readable metadata for easy comparison and discovery.

CMS (website) | Course catalogue  
Curriculum management






# ORIENTATION




# The diagram



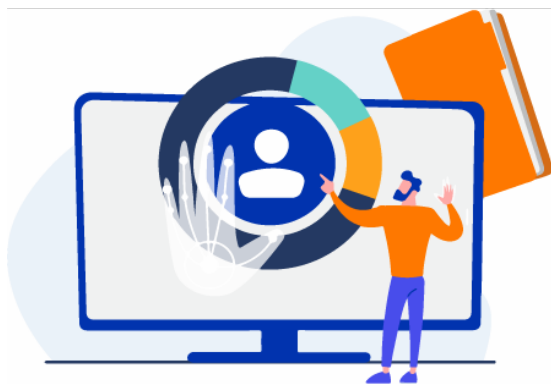
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## USE CASE 2

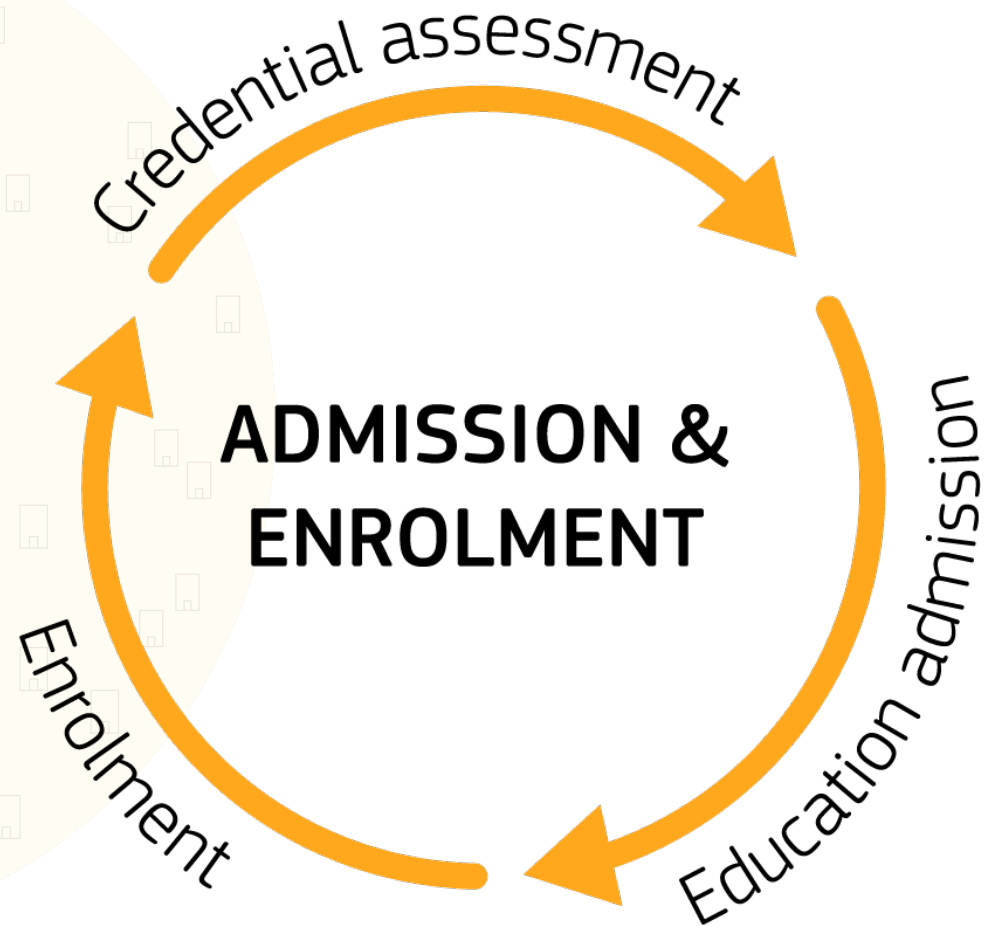
### Apply & get recognition



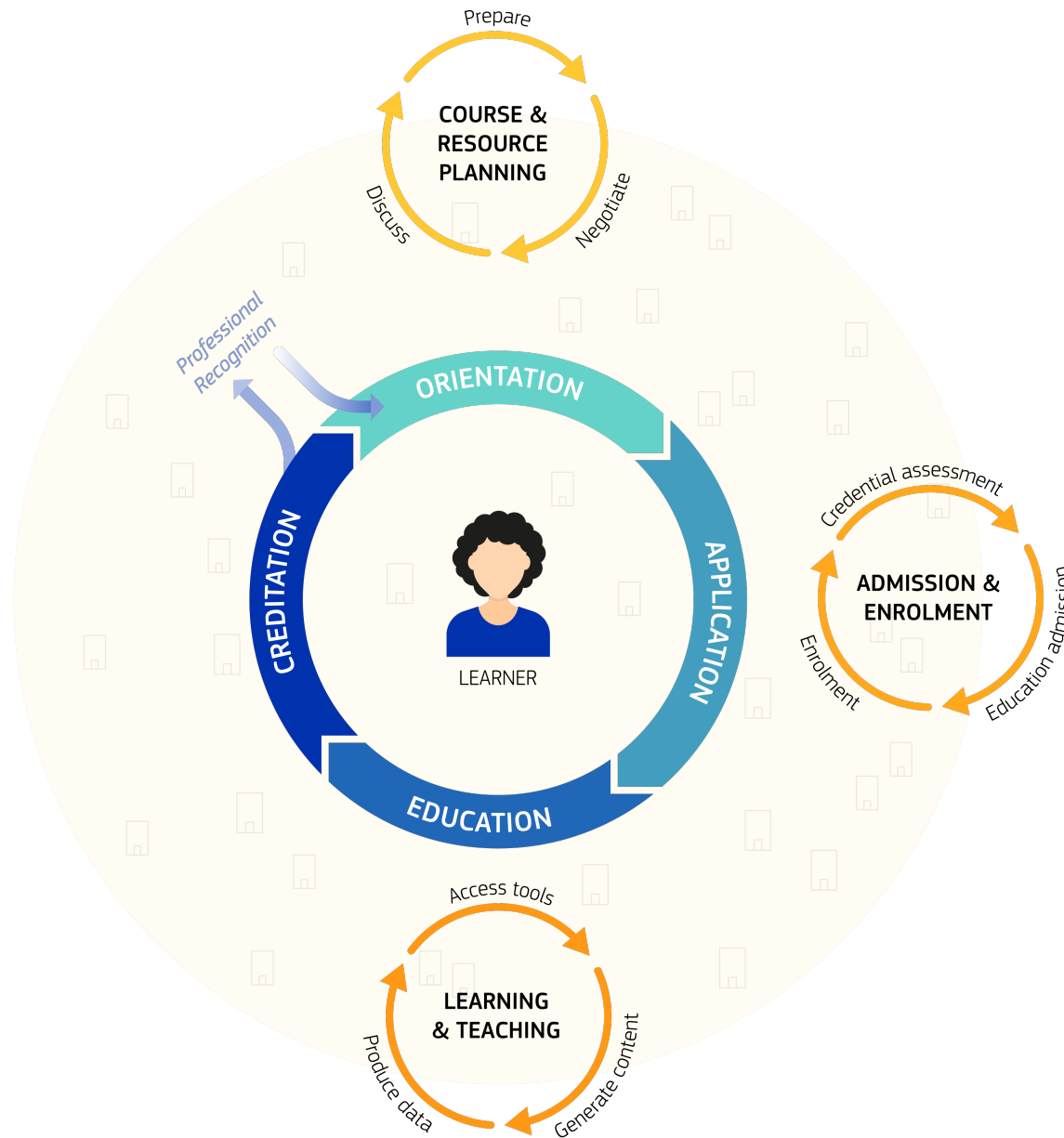
Simplifying credit recognition and cross-institutional enrolment, emphasising seamless data exchange to support all forms of learner mobility and academic continuity.

Admissions Recognition






# APPLICATION




# The diagram



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# EDUCATION

## USE CASE 5

### Generate data

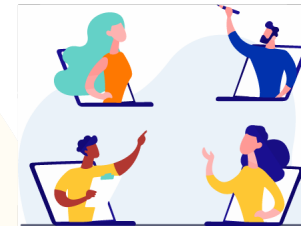


Establishing a standardised approach for the exchange of learners' activity data to ensure a seamless integration of various virtual learning environments.

Learning Analytics  
Student Analytics

## USE CASE 3

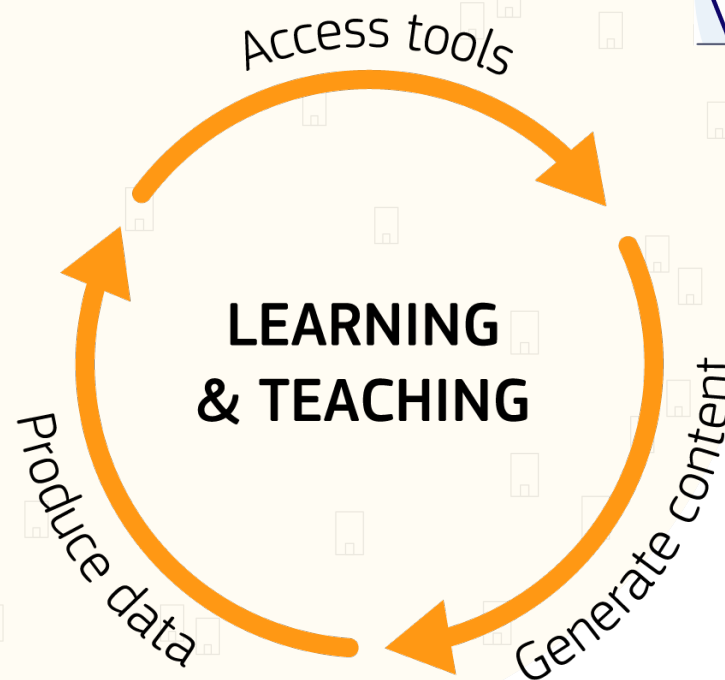
### Access tools



Streamlining the procurement, management, and governance of shared resources among alliance members, covering both physical and virtual assets.

Laboratory access  
Library systems  
Research tool registry

## LEARNING & TEACHING



## USE CASE 4

### Generate educational resources



Promoting the accessibility and mobility of educational materials, fostering a collaborative and accessible educational environment.

Content generation  
Sharing  
Use and re-use

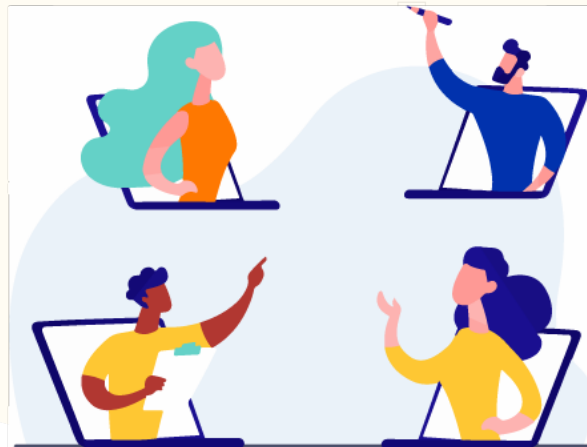
# EDUCATION

Access tools

LEARNING  
& TEACHING

## USE CASE 3

### Access tools



Streamlining the procurement, management, and governance of shared resources among alliance members, covering both physical and virtual assets.

Laboratory access

Library systems

Research tool registry

# LEARNING & TEACHING

Generate content

## USE CASE 4

### Generate educational resources



Promoting the accessibility and mobility of educational materials, fostering a collaborative and accessible educational environment.

Content generation

Sharing

Use and re-use



## USE CASE 5

### Generate data



Establishing a standardised approach for the exchange of learners' activity data to ensure a seamless integration of various virtual learning environments.

Learning Analytics

Student Analytics

## LEARNING & TEACHING

Produce data

# The diagram



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## USE CASE 6

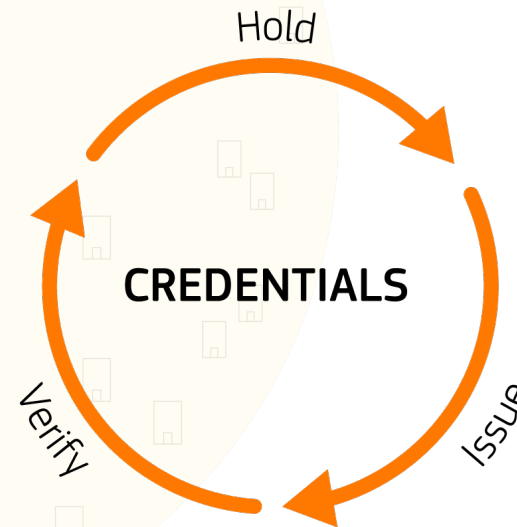
# Earn credential



The digital management of educational credentials (issuance, verification, revocation), affirming the achievements from diverse learning experiences.

Micro-credentials

Portable credentials



Professional  
Recognition

CREDITATION

# The diagram



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= Learner cycle for big and small learning opportunities: like a course, module or whole programme.

# How does a Reference Architecture help Interoperability?

## Learner's Perspective | 5 ...

As a student or as an educator I wish to discover learning and mobility opportunities (joint degrees, double degrees, open micro-credentials, apprenticeships, mobility opportunities) in Europe. In addition, as a learner i want to be able to

As a student I want to know if I meet the requirements to enroll a learning opportunity offered by any HEI.

As a student I want to know the skills / competences aquired upon completing a learning opportunity.

As a student I want to know if the learning opportunities take place at a suitable time (weekday, exact time) for me to combine them with my degree programme at my home

As I student, I would like to know what I can do with extra/ extracurricula classes I attended.

## Educator's Perspective | 2 ...

As an educator I wish to make use of skills frameworks in building my courses, and to publish/augment my

As an educator I want to update the contents of the catalog offered by my institution

+

## Admin staff's perspective | 2 ...

As an admin staff, I want to know which learning opportunities I should make available to students from this

As an administrator I want to collect the requirements for each learning opportunity.

+

## Other perspective | 3 ...

As an ENIC-NARIC/employer I wish to check information about historical courses in Europe.

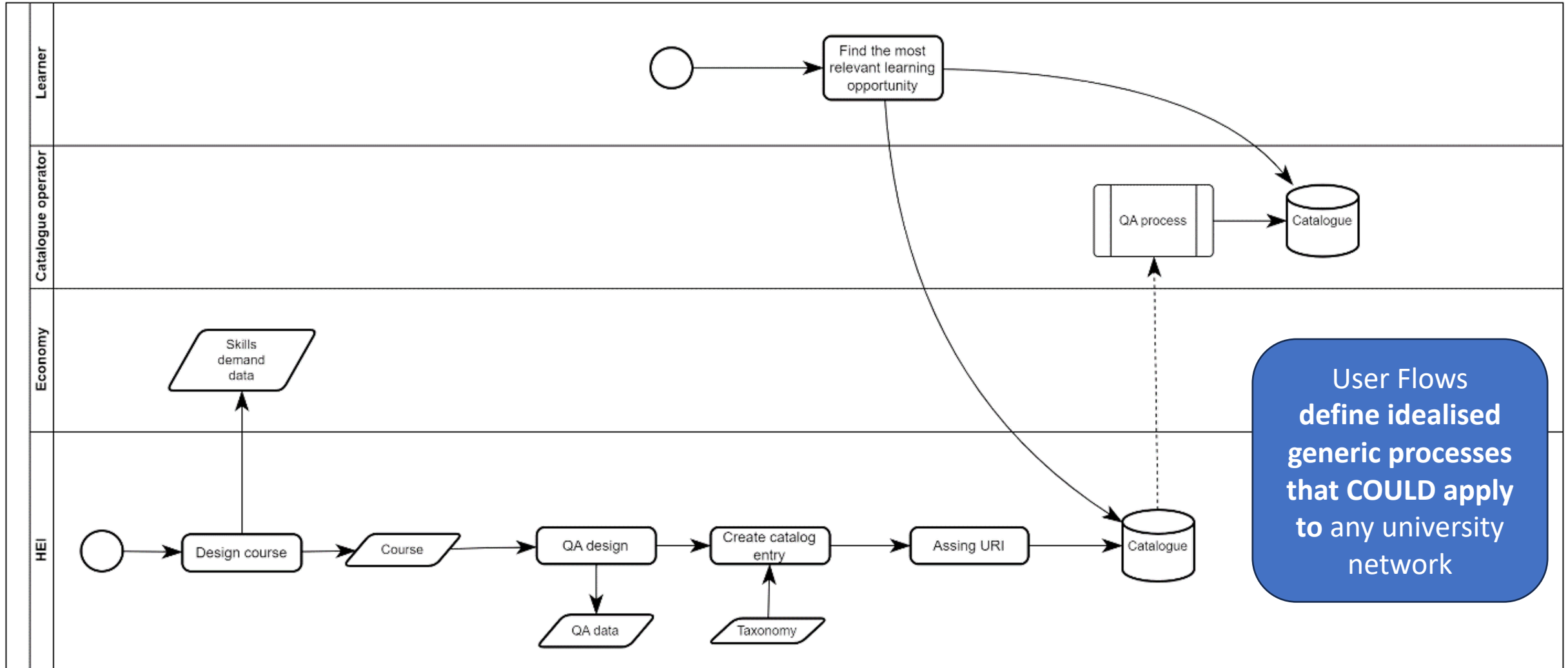
As an institution I want to make my course catalog available to search engines in an standardised way.

As a policy maker I want data on courses skills supplied by "HEI"

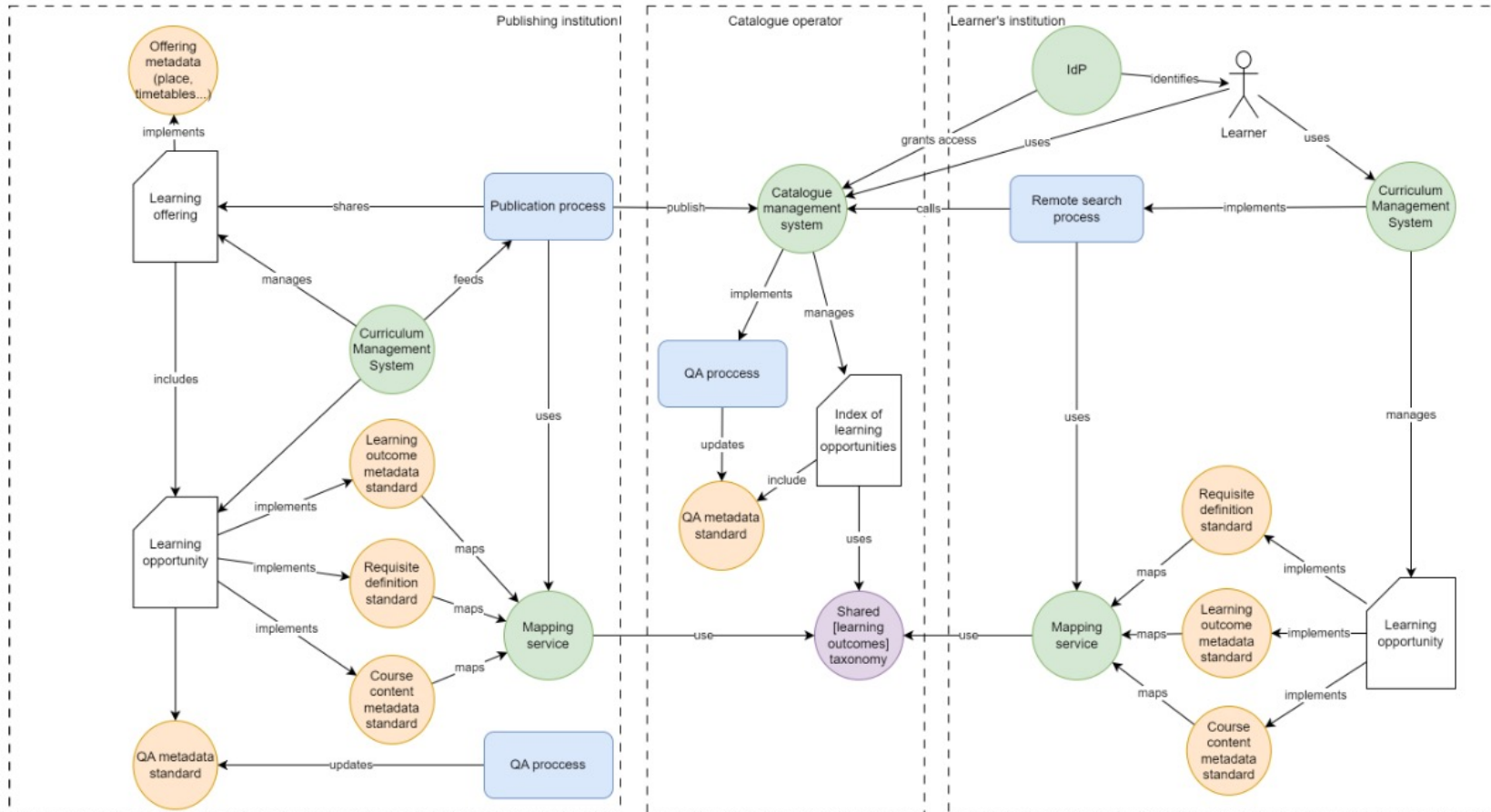
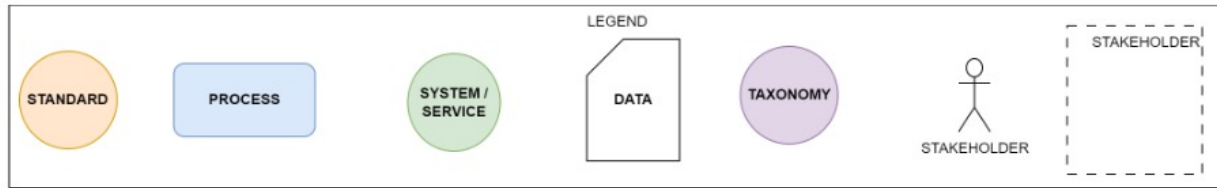
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User Stories  
define the needs  
of learners,  
educators and  
administrative staff

# How does a Reference Architecture help Interoperability?



# How does a Reference Architecture help Interoperability?



Architectural Diagrams identify the **standards, services and systems** required to make the use case work.

# How does a Reference Architecture help Interoperability?

## 11 Annex I – Inventory of tools

Name	Link	Description	Draft architecture systems covered
<a href="#"><u>Bestr</u></a>	<a href="#">External link</a>	Digital credentialing platform to valorise competencies growing in the higher education system and connect them with employers	Credentials management system Claim management system
A+ (in house developed platform, mostly for CS)	<a href="#">External link</a>	An interoperable and extendable Learning Management System (A+ LMS, <a href="#"><u>apluslms</u></a> ) that uses a combination of services to enable teachers to fully customize their e-learning materials and to combine different kinds of materials flexibly. Today, several web services and build tools are included in the A+ software family	Learning Management system Educational resources management system Tool
Aalto.fi (for Open University)	<a href="#">External link</a>	Course catalogue with the list of courses open to everyone regardless of background or age. Open University offers individual courses in Business, Technology, Languages, and Art and Design.	Catalogue management system
<a href="#"><u>Aaltodoc</u></a>	<a href="#">External link</a>	Institutional repository of Aalto University.	Educational resources management system
<a href="#"><u>Biblioteca do conhecimento online</u></a>	<a href="#">External link</a>	Educational resources repository. Makes unlimited and permanent access available, within the research and higher education institutions, to full texts from over 16,750 scientific international publications from 16 publishers, through subscriptions negotiated on a national basis with these publishers.	Educational resources management system
Academic Directory	<a href="#">External link</a>	Registry of academics and researchers, can be publicly shown, interconnecting them and they can send emails.	
EC2U - Internal tool - Semantic Search engine		EC2U is developing a Developing a semantic search engine supporting automatic classification and structural search of the large document corpora	Educational resources management system - search service

The inventory gives an overview of tools and services used by alliances



# EduXS

Het in kaart brengen  
Europese digitale  
onderwijslandschap

**2023:**

[www.eduxs.eu](http://www.eduxs.eu)

[pilot.eduxs.eu](http://pilot.eduxs.eu)

**2024:**

Werken naar MVP

Home Relationship View About us eduxs

Compare (2) Contribute

## Mapping the Digital Education Ecosystem

Ensuring understanding of Europe's digital education landscape through stakeholder mapping, projects, and standards.

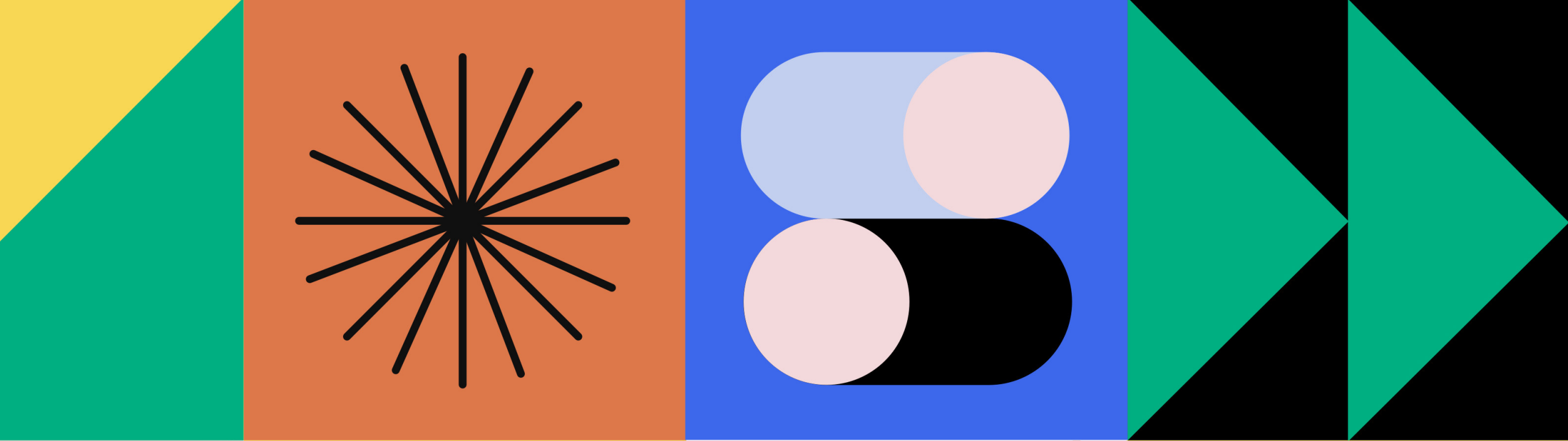
Search Projects, Organisation, Services and more...

- Projects** (87)  
Projects are initiatives that support education, linked to funding, goals, and the problems they solve, grouped by scope, type, and country.
- Organisations** (287)  
Organisations are institutions or groups working in the education sector, linked to their role in educational projects and standards. Categorisation on type and country.
- Services** (77)  
Services in the educational sector represent tools or solutions, each developed for a specific purpose and overseen by a particular organization.

Doel	EU - publiek	NL – Npuls & SURF
1. Storylines en views met stakeholders	<ul style="list-style-type: none"> <li>• Europese allianties</li> <li>• ESCi</li> <li>• IT Rolling plan</li> </ul>	<ul style="list-style-type: none"> <li>• EduID</li> <li>• OO-API</li> <li>• OB3.0</li> <li>• NGF</li> </ul>
2. Data-input	<ul style="list-style-type: none"> <li>• Uiteindelijk voorschrijvend mogelijk maken? E.g. ELM KPI's erbij meenemen</li> </ul>	<ul style="list-style-type: none"> <li>• Gerealiseerd voor 3 vraagstukken (NGF, allianties, ..)</li> </ul>
3. Data governance en processen	<ul style="list-style-type: none"> <li>• Gedragen processen voor review van data</li> </ul>	<ul style="list-style-type: none"> <li>• Up to date houden van NL input</li> </ul>
4. Tooling en techniek	<ul style="list-style-type: none"> <li>• Datamodel en architectuur</li> <li>• Gebruikersinterface/frontend</li> <li>• Beheersinterface/backend</li> <li>• (informatie)-architectuur EduXS</li> </ul>	
5. Plan voor vervolg	<ul style="list-style-type: none"> <li>• Europese NGO, losse governance via bijv. <a href="#">Commons Conservancy</a></li> </ul>	<ul style="list-style-type: none"> <li>• Pro-actief gebruik binnen standaardisatieraad &amp; edustandaard</li> </ul>

# Tijdslijn internationale afstemming

- EUNIS conferentie 7 juni
- TNC samenwerking binnen GÉANT 12 juni
- Duitse CIO conferentie op 17 juni
- THE digital universities in september
- 1EdTech conferentie in oktober



Dank voor de aandacht!  
Evelien Renders  
[Evelien.renders@surf.nl](mailto:Evelien.renders@surf.nl)

