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QualityLink

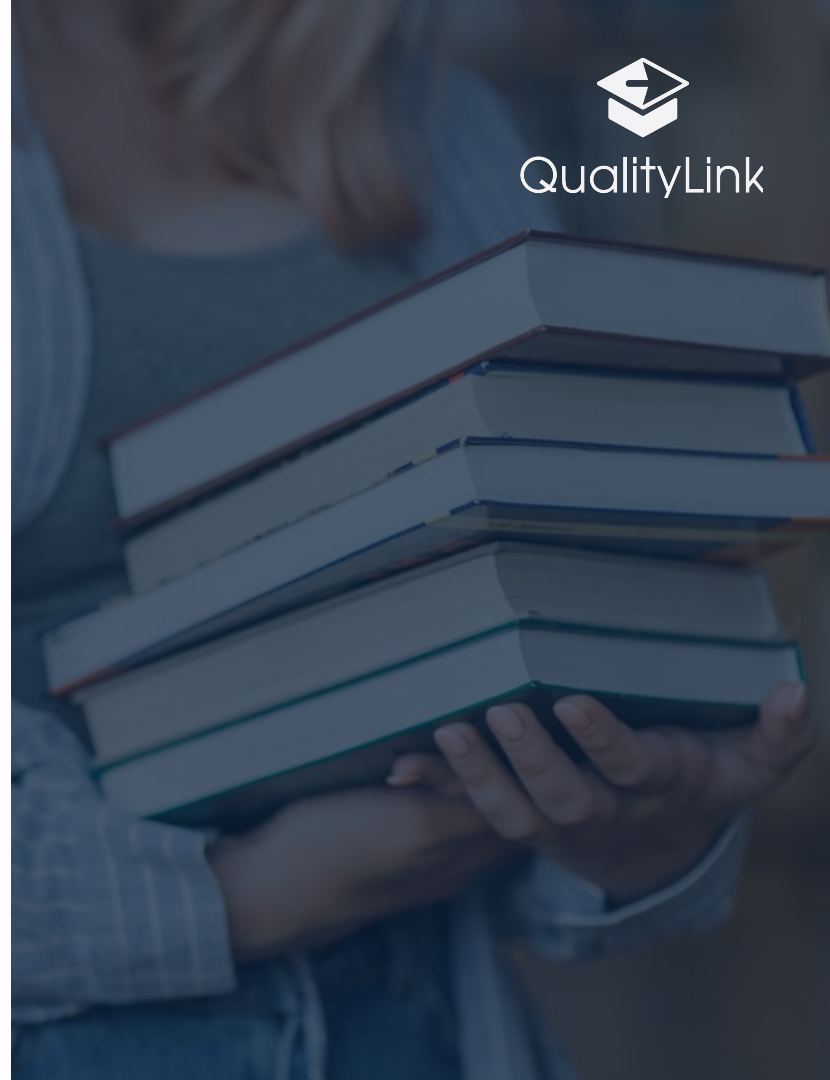
Interoperable course catalogues - bridging data models and standards

FOREU4ALL sub group on IT & Digitalisation
7 May 2026

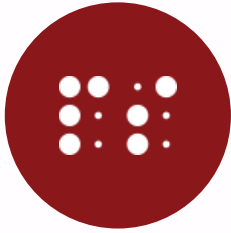
Colin Tück



Knowledge
INNOVATION
Centre



Current challenges



Reliable data is essential for flexible learning pathways and for recognition of (not only) micro-credentials



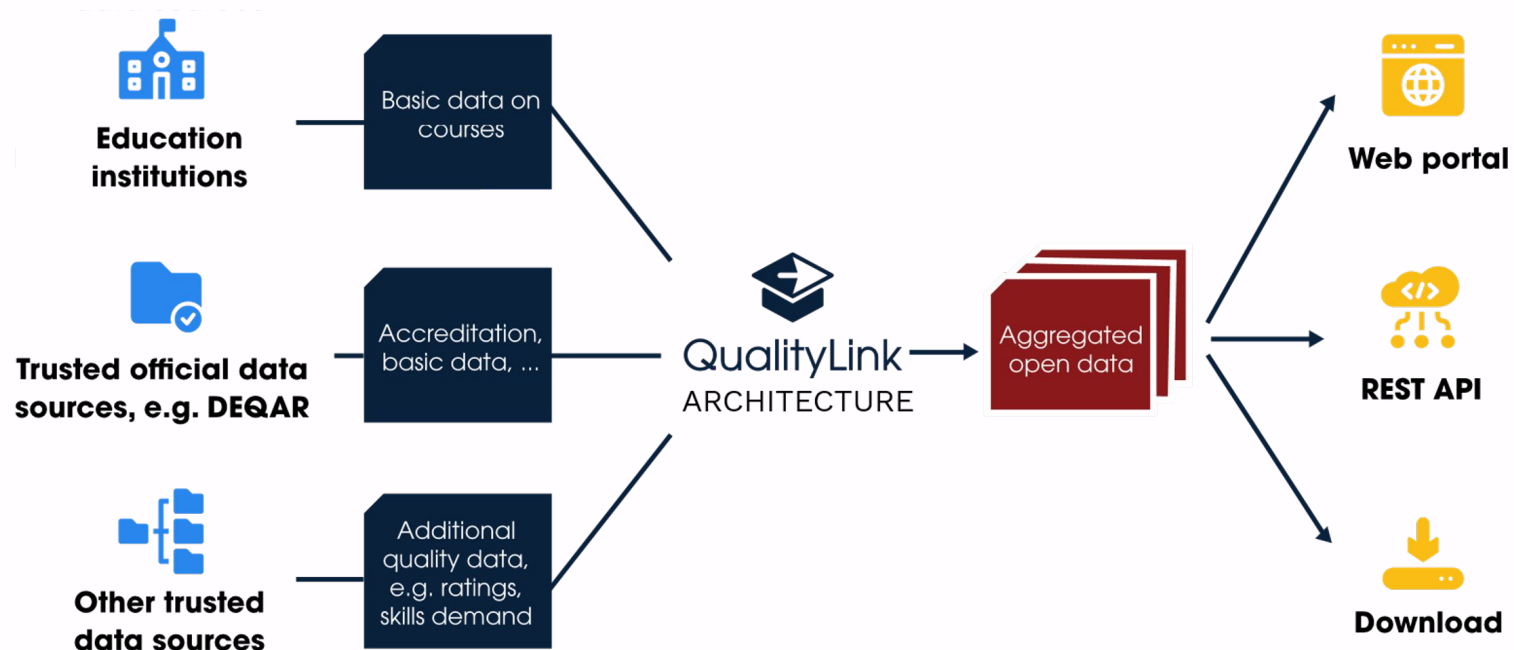
Virtually all alliances are working on a joint course catalogue as part of their inter-university campus



Basic course data often not published in open & structured form, other data (ratings, recognition history, ...) even less

Objective

Create a Europe-wide open data exchange architecture for course catalogue data, with data coming directly from the source (HEIs)



What information are we looking at

1. Basic elements

Required

- Title of the micro-credential
- Country(ies)/Region(s) of the issuer;
- Awarding body(ies)
- Learning outcomes
- Notional workload/ECTS
- Level (EQF, QF-EHEA)
- Type of assessment
- Form of participation
- Type of quality assurance

Optional

- Prerequisites
- Supervision and identity verification
- Integration/stackability options

(Council Recommendation on a European Approach to MCs, 2022 - non-individual elements only)

2. Quality indicators

1. Content Relevance, Labour Market Demand and Accuracy	1.1 Accurate and up-to-date
	1.2 Demand for skills
	1.3 Stackability
2. Teaching Methods and Pedagogy	2.1 Quality Assurance
	2.2 Tutoring
	2.3 Virtual learning env.
3. Accessibility and Inclusivity	3.1 Recognition of prior learning
4. Learner-Centred Approach Satisfaction and Success	4.1 Student ratings
5. Institutional Reputation	5.1 Expertise of Lecturers
	5.2 Networks
	5.3 Recognition history of the micro-credential

3. Alliance use cases

Enrolment

- Capacity
- Application period
- Enrolment process

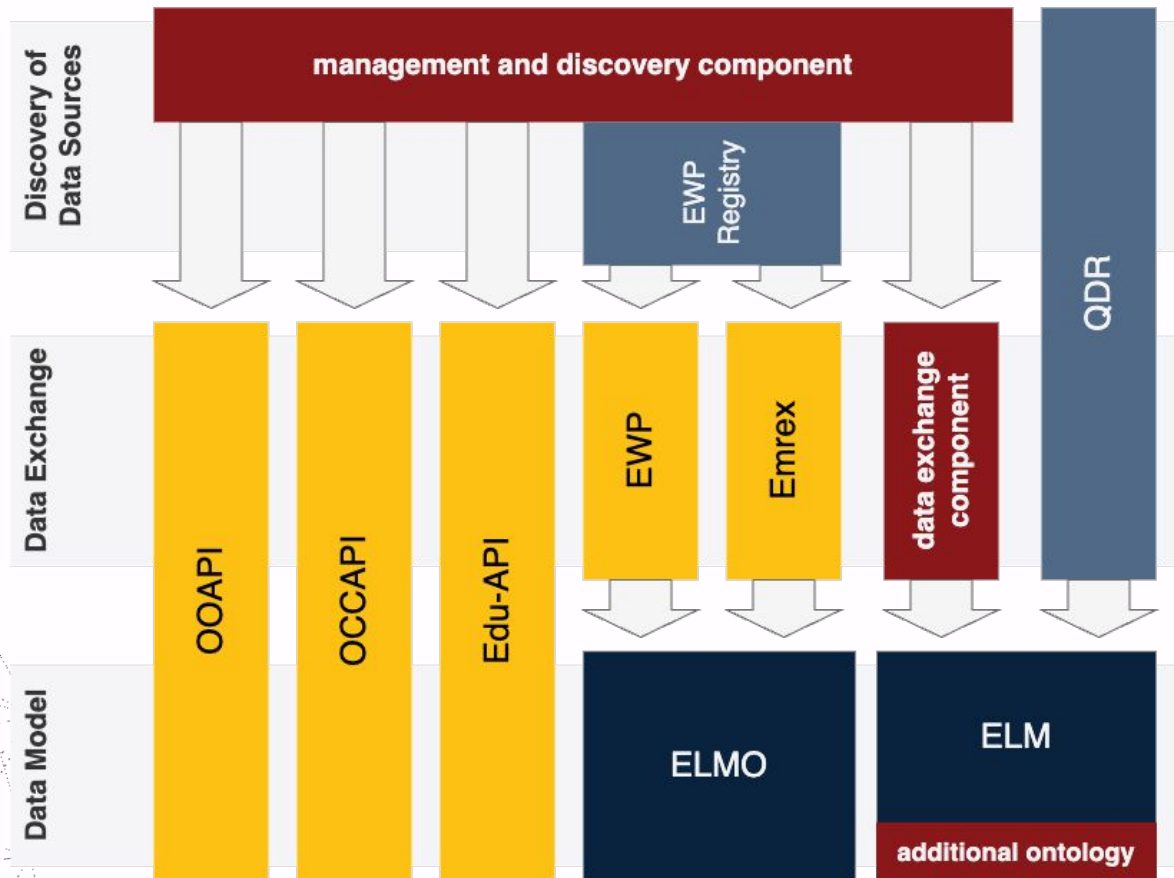
Pathways

- Requirements and prerequisites
- Conditions for specific learner groups

Recognition

- Grade distribution details

Existing landscape

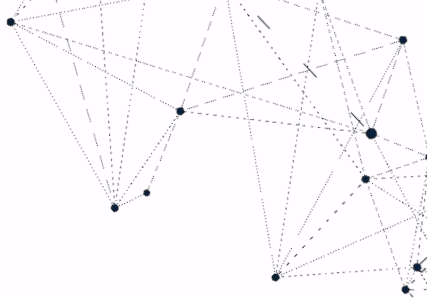


Principles:

- Build on what's there
- Keep bar to adoption low
- Be flexible
- Open to extensions
- Open source

How standards cover the basic elements

Element	ELM	OOAPI	Edu-API	OCCAPI
Title	yes	yes	yes	yes
Awarding body	yes	yes	yes	yes
Learning outcomes	text + ESCO	text	no	text
Workload/ECTS	yes	yes	yes	yes
Level	EQF	EQF	yes	EQF
Type of assessment	yes	yes	no	yes
Form of participation	yes	yes	yes	indirect
Type of QA	yes	no	no	no
Prerequisites	yes	indirect	no	yes
Supervision and verification	yes	no	no	no
Integration/stackability	indirect	no	no	no



Future OOAPI
& Edu-API
extensions
could cover
additional
elements

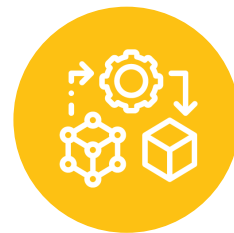
Three steps that we found were necessary:



1. Extend the ELM ontology and profile to cover all data/attributes that are relevant

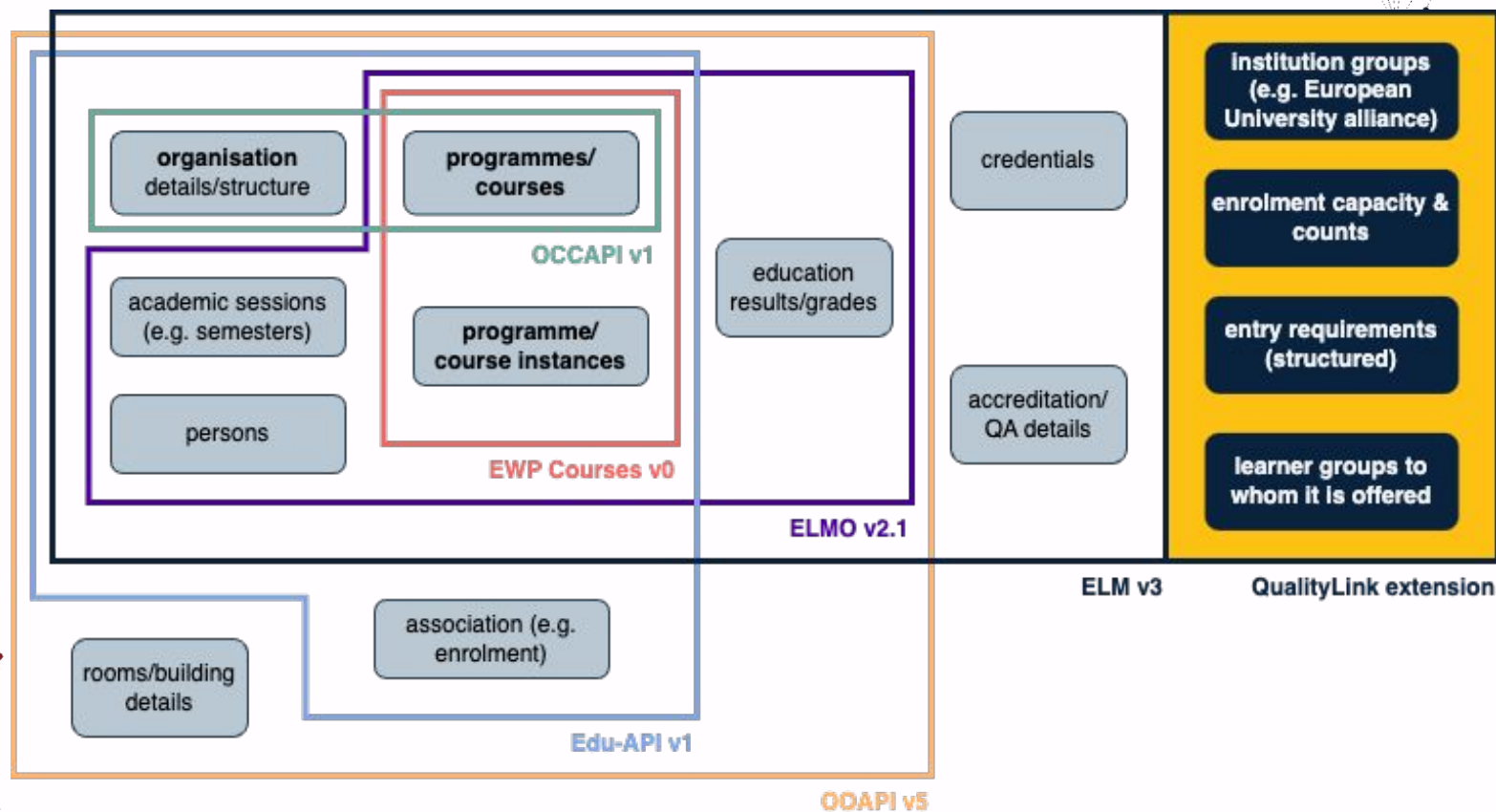


2. Propose a scalable approach to discover data from HEIs, not only within alliances/ small groups



3. Bridge existing data standards and create a standard approach to aggregate data from any of them

1. Ontology extension and profile

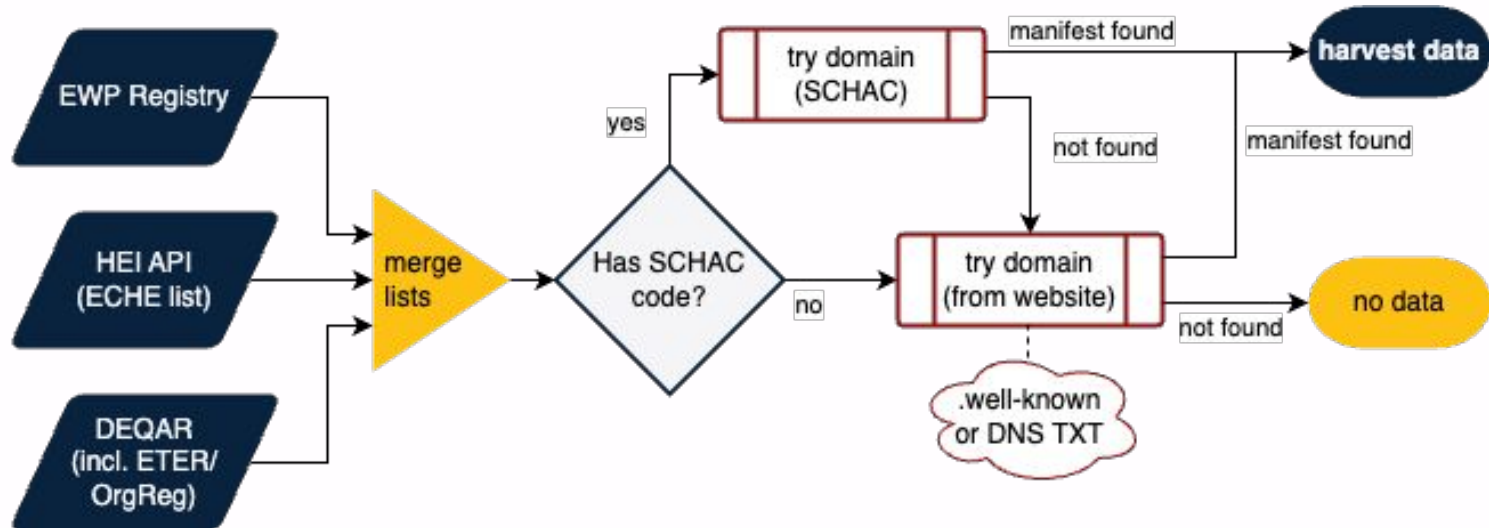


2. Data source discovery

Trusted providers
(from DEQAR)

Internet domain
(website & SCHAC)

Announce source(s)
through manifest file



2. Data source discovery

```

{
  meta: {
    schac: "tuwien.ac.at"
    eterid: "AT0005"
    deqarid: "DEQARINST0005"
  },
  sources: {
    0: {
      name: "main source"
      type: "elm"
      path: "https://at0005-ql-dev.test.36ada.eu/courses.ttl"
      version: "3.2"
      auth: {
        type: "httpheader"
        field: "x-qualitylink-test"
        value: "HVX51N0tsnuIiCuXIKvDvXGICsvicli/LYLq1bE/LEY1Bb0eejzJoIBjPEbZo1yFbzn0AuceYLPkQcbKwYbEe5hgsH4+9r8LYguf6TDKZyp0C RXrh+e8lVaIKB Lm+cyJYqaHmCAJH+p8CDs4tixvHy3dQsT9BgAeJgt9u5n9Jg5zEBF8+csDjXXhP8KpuMazT5FumPZV0e+e3zutgRHMbQIJl2mkv5d1jVTVEBgksgcnMTB6vsBMOVvbIg VrxseeFTgg89FTUfJIuW1aEQHoWtwaA52q50aMymXEmA3ceaQVAML6G/2qpjc7TTrxewEA"
      }
    },
    1: {
      name: "additional courses"
      type: "elm"
      path: "https://at0005-ql-dev.test.36ada.eu/more-courses.ttl"
      version: "3.2"
      headers: {
        x-eccentric-header: "random value"
      }
    },
    2: {
      type: "edu-api"
      path: "https://build.1edtech.org/eduapi/ims/eduapi/base/vlp0/"
      id: "1edtech"
      name: "1EdTech testing endpoint"
      auth: {
        type: "httpheader"
        field: "Authorization"
        value: "d+XI9buSoxKqxFDveh0lwvy8jtd140Qd0Q6pDfXitD7U11VBbxddGc8FN3dU8T9b0KubhC oe2Kb1l0mxHMSUzNp1PhnAN09kHnY3Utr/rJB/SJ6ySLa6yM4ZwTkF17cyaXhBuf99QE0Y VN56C8zXS0R1UxcchugrZT7mkvrbKMFHydvGbm9AYxo2R0TKAb7NnmMwxjft7ThgFv0gVk Zb9lI9K4Jkoo0K+fi97a0DQzbDxhCnxIRNDGcHuukj4RAHb0D5sld061GSKLb3nSEx940A fGALh4/udQa6623ECrvvo6HYI09ZdBaLaAdZTxnwtGI06NslzBfxJmKU8xZge1sH4+SlQm+"
      }
    }
  }
}
```



Domain search order

4 domains found

- tuwien.ac.at DNS TXT Manifest not found
- tuwien.ac.at .well-known Manifest not found
- at0005-ql-dev.test.36ada.eu DNS TXT Manifest not found
- at0005-ql-dev.test.36ada.eu .well-known Manifest found

Manifest file is valid

Found at: <https://at0005-ql-dev.test.36ada.eu/.well-known/quality-link-manifest.json>

Refresh

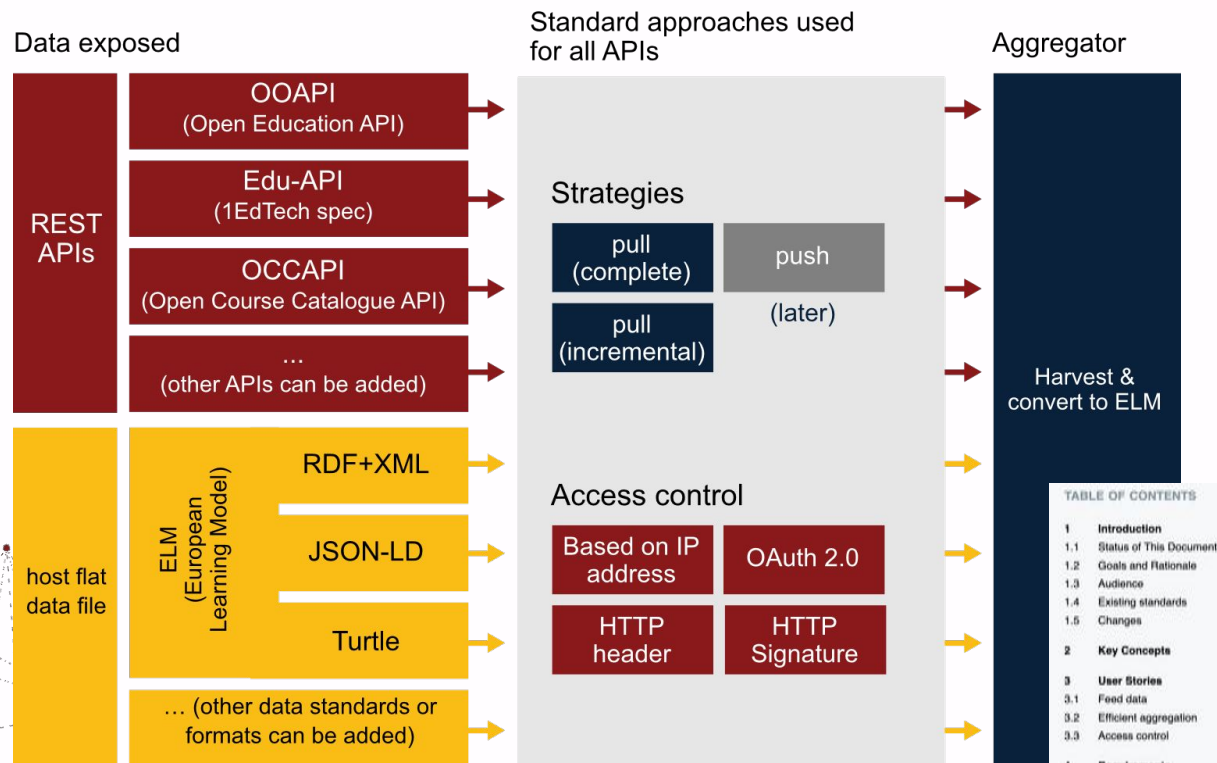
Was your manifest file not found? [Visit the help page](#)

Data sources

The following data sources were found in the manifest file

ID	NAME	TYPE	PUSHED
bf68fbc1...	additional courses	ELM	—
1edtech	1EdTech testing endpoint	EDU-API	29 Apr 2026
e93e48fb...	main source	ELM	4 May 2026

3. Data exchange architecture



<https://specs.quality-link.eu/>

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QualityLink Data Exchange Specification

Living Standard, 18 April 2025

Issue Tracking:

GitHub

Editors:

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Project Website:

<https://quality-link.eu/>

Project Reference:

Task 3.6 (Creation of a Technical Trusted List Standard)

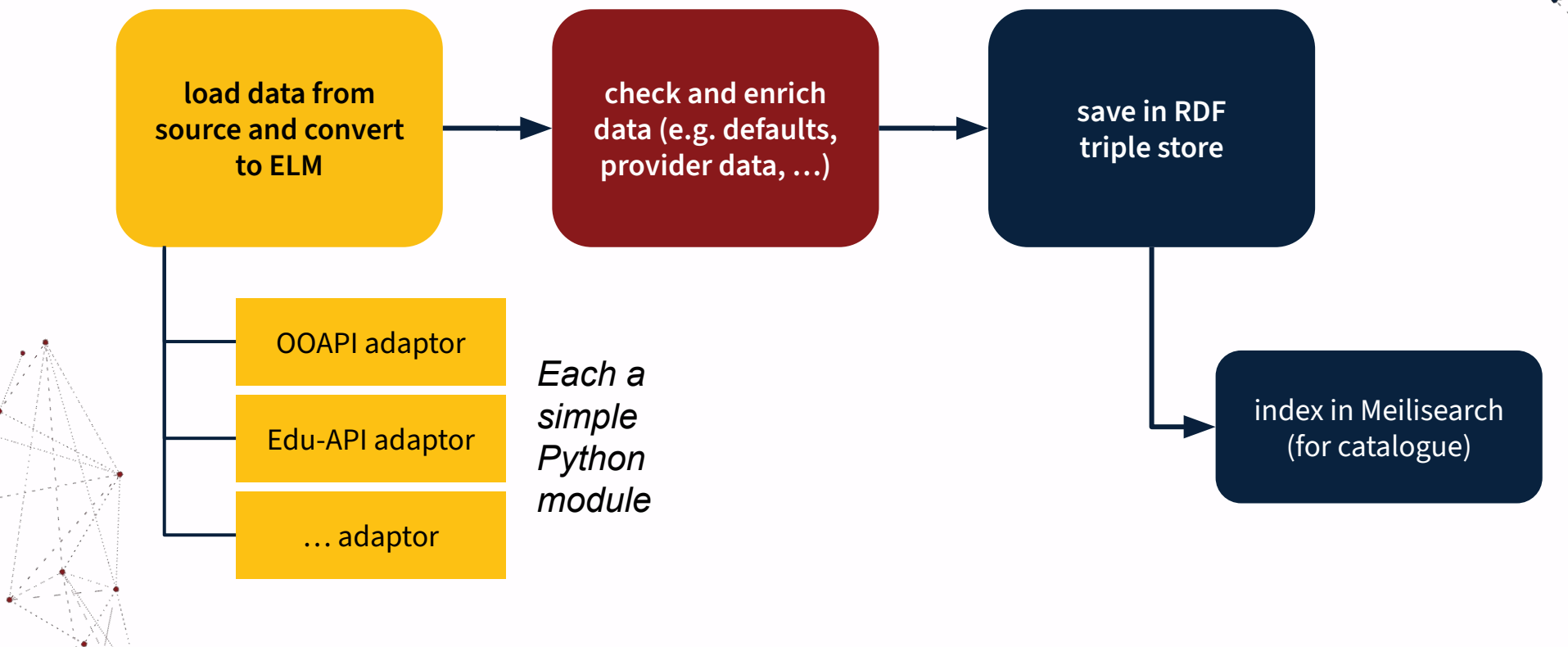
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Abstract

This specification standardises how HEIs and other data providers can make data available for aggregation.

3. QualityLink pilot aggregator pipeline



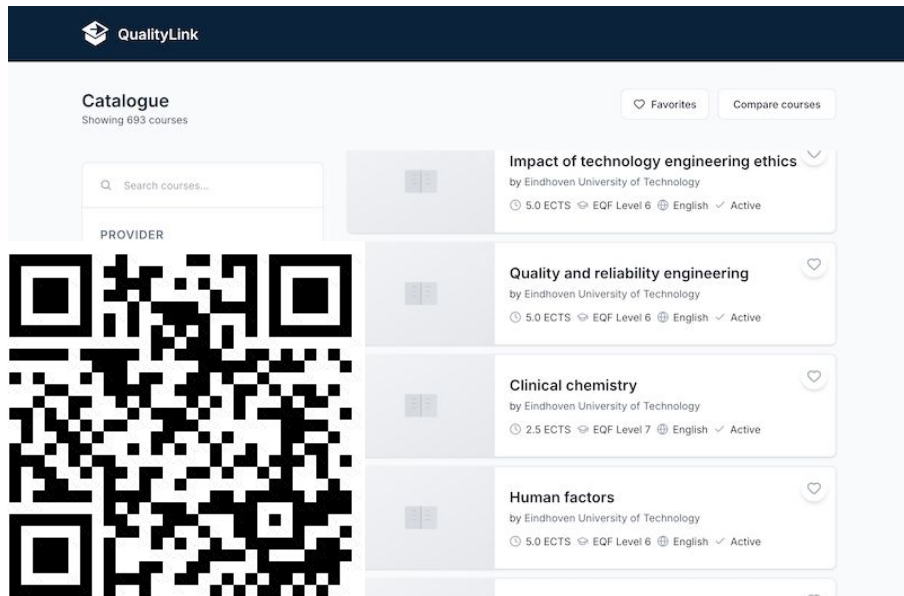
Overview: specifications developed

- **Data Sources and Access Policy** – terms and conditions for data use
- **Ontology** – extends the **European Learning Model (ELM)**
- **QualityLink Application Profile** – extends the ELM profile for Learning Opportunities and Qualifications (LOQ)
- **Course Identifier Specification** – common format for unique course identifiers
- **Data Source Discovery Specification** – mechanism to discover data sources exposed by institutions
- **Data Exchange Specification** – describes use of supported formats (**ELM**, **OOAPI**, **Edu-API** and **OCCAPI**)



<https://specs.quality-link.eu/>

Pilot aggregator & catalogue: draft specs implemented

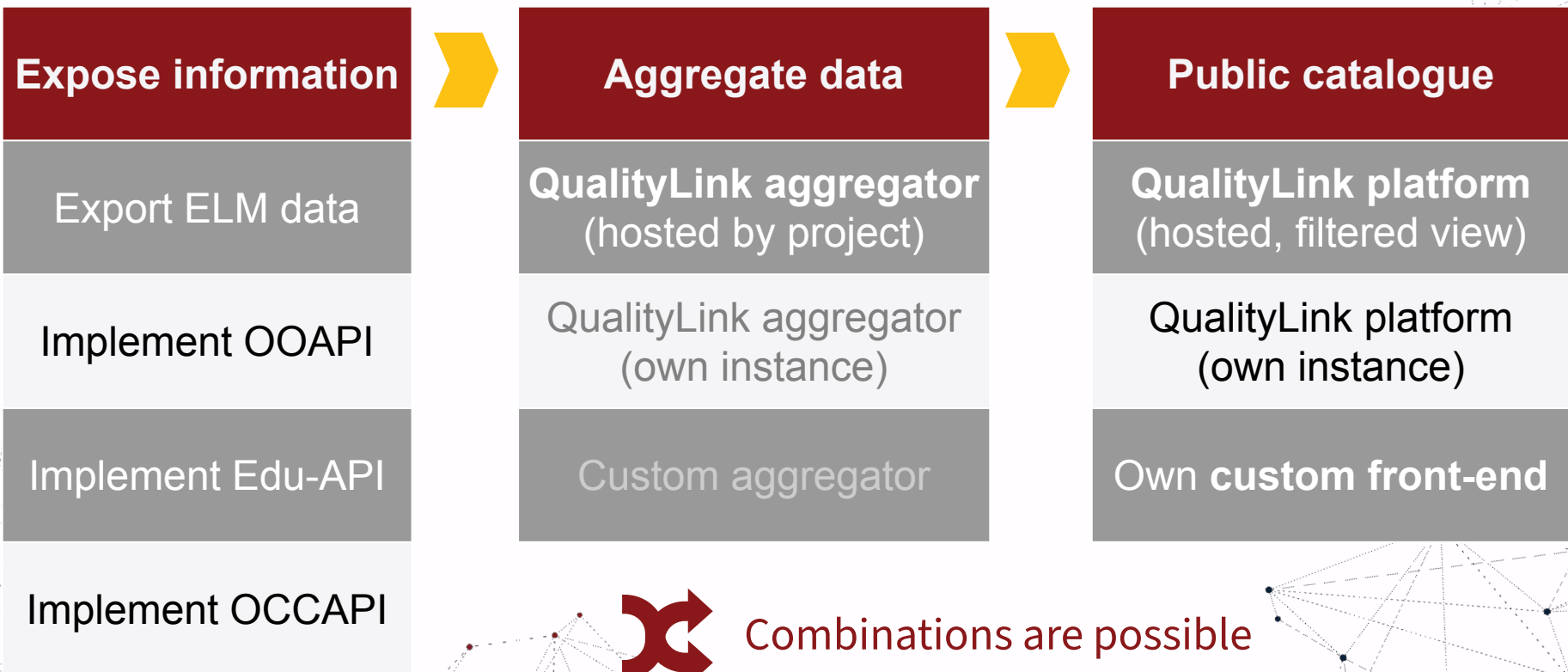


<https://courses.app.quality-link.eu/>



<https://dashboard.app.quality-link.eu/>

Implementation options for institutions and alliances



QualityLink aims to address all stakeholders' needs by furnishing them with all relevant information about courses and micro-credentials from a diversity of sources to improve recognition decisions and allow learners to follow flexible learning pathways. To make sure that the standards are of high quality and have ownership in the community, the consortium has created a Standards Consultation Board – a group of higher education interoperability experts from across different countries. Through creating open standards and collaboration, the project aims to establish the infrastructure for aggregating quality information from a wide range of sources.



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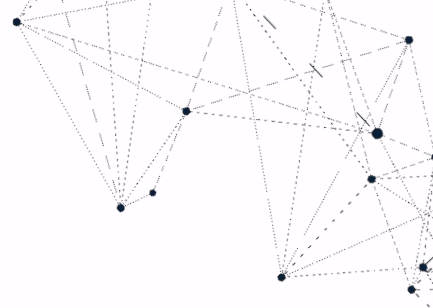
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Use cases



Potential learners,
guidance



Recognition and
labour market



Alliances' joint
catalogues



Mapping and
benchmarking



Interoperability for
other apps



Europe-wide
visibility



Web portal

- Publicly accessible
- Basic search, filtering, ...
- Preset views for alliances, etc.



REST API

- Integration into other applications
- Custom course catalogue frontend
- Free, but with rate limits



Download

- Research or analysis
- Freely accessible without restriction

Dataset available under
Creative Commons
Attribution-NonCommercial:

- requires that users give credit
- allows to distribute, remix, adapt – but for noncommercial purposes only



Status of implementation

ELM (static file) sources	supported (v3)
ELM – incremental updates	work in progress
OOAPI sources	supported (v5)
Edu-API sources	supported (v1)
OCCAPI sources	work in progress
Access control: based on IP address	supported
Access control: HTTP Request Header	supported
Access control: OAuth 2.0	on hold
Access control: HTTP Signature	on hold



[https://quality-link.eu/
step-by-step/](https://quality-link.eu/step-by-step/)

Future perspectives



Sign In Create an account

Welcome to SkillData

A skills intelligence platform that helps organisations connect learning to workforce needs. Map skills across job profiles and qualifications, identify gaps, and build personalised learning pathways for your employees or learners.

Extract skills from any text

Paste or write a course description, job description, or any text to find matching skills

Skill Finder · 13896 Job profiles · 6793 **Qualifications · 483** Skill frameworks · 4

E.g. 3D printing

Find skills

Everything you need to build with Skill Data. Documentation → Conditions of use → Large-scale API use →



Catalogue
Showing 693 courses

Search courses...

PROVIDER
All

EQF LEVEL
All

FIELD (ISCED-F)
☐ Computer use 4
☐ Management and administration 1
☐ Travel, tourism and leisure 1

ECTS
1 30

Impact of technology engineering ethics
by Eindhoven University of Technology
5.0 ECTS EQF Level 6 English Active

Quality and reliability engineering
by Eindhoven University of Technology
5.0 ECTS EQF Level 6 English Active

Clinical chemistry
by Eindhoven University of Technology
2.5 ECTS EQF Level 7 English Active

Human factors
by Eindhoven University of Technology
5.0 ECTS EQF Level 6 English Active

Discover & Quality Indicators

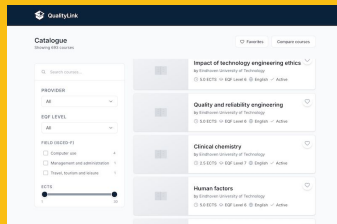
Quality Information about Learning Opportunities from different sources

- Content Relevance & Labour Market Demand
- Teaching Methodology
- Accessibility
- Learner-Centred Approach

Policies & Standards

- Unique Course Identifier
- Policy: data sources and access
- RDF ontology and application profile
- Data source discovery
- Data exchange, using established standards: ELM, OOAPI, Edu-API, OCCAPI

Pilot Aggregator and Catalogue



frontend for
learners



dashboard for
education providers

Community Co-Creation

QualityLink Standards Consultation Board

European University Alliances

EU4Dual
CHARM-EU
EuroTeQ
UNITA!
ECIU
ENHANCE

European Digital Education Hub

Interoperability Workgroup

EdTech
1EdTech

Policy

SURF
EHESO
EQAR
NAWA
EWP/Emrex