



QualityLink

Development of Technical Standards to support sharing of Quality and Course information

Technical Specifications

QualityLink Report on Work Package 3

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Work Package

3 - Development of Technical Standards to support sharing of Quality and Course information

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Table of Contents

Management Summary.....	4
Results and Reports.....	5
 Report on Task 3.2 Proposal of a Course Identifier and Task 3.5 Proposal of a Generic Trusted List Standard.....	6
Introduction.....	10
Principles.....	12
Overview of components.....	13
Policies.....	15
Technical specifications.....	18
 Annex.....	32
Technical Specifications.....	32
Using the aggregator: Technical Guide.....	35
Using the aggregator: Guide for decision-makers.....	41
Ontology Mapping.....	45
QualityLink Data Sources and Access Policy.....	49
QualityLink Ontology and Application Profile.....	59
QualityLink Course Identifier Specification.....	84
QualityLink Data Source Discovery Specification.....	94
QualityLink Data Exchange Specification.....	112
QualityLink Ontology and Application Profile (SHACL constraints).....	135
QualityLink DESM Shared Mappings.....	189

Management Summary

This work package focused on the development of technical standards with regard to two primary issues facing Higher Education at present:

- to identify and compare courses across different digital systems, to be addressed by a Unique Course Identifier standard proposal;
- to exchange course information across different digital systems, to be addressed by a Trusted List standard proposal which further developed into a wider set of standards proposals related to Quality Data Exchange.

With the beginning of the development of the QualityLink platform in Work Package 5, all technical standards were moved from draft status to an initial tagged release 1.0-alpha so that technical development may rely on a specific version of the standards to be implemented. The technical standards themselves were continued to be updated in accordance to the feedback from the wider community, practical experience obtained during implementation of data aggregation and any relevant changes in related standards.

Integrated Activities and Achievements

The development of the technical standards that aimed at resolving these interoperability issues took place in parallel sets of activities, where tasks 3.1, 3.2 and 3.3 (led by EUF, supported by KIC) dealt with the Unique Course Identifier standard, and tasks 3.4, 3.5 and 3.6 (led by KIC, supported by EUF) dealt with the Quality Data Exchange standards.

Concept Paper

The result of the initial activities (3.1, 3.2 and 3.5) was compiled into a concept paper on Quality Data Exchange Architecture. (<https://quality-link.eu/concept-paper/>)

This provided a consistent outline of all particular issues found and how they relate to each other, and became the primary reference for discussions with the Standards Consultation Board in work package 4.

Ontology Mapping

Another very important result of this work package is the Ontology Mapping produced within the scope of activity 3.4 (<https://quality-link.eu/project-outputs/ontology-mapping/>).

This helped to identify the common features of existing standards that could serve as a reliable starting point for quality data exchange.

Technical Specifications

Having concluded the Ontology Mapping and the Quality Data Exchange Architecture concept paper, the leading partners (KIC, EUF) published the initial draft technical standards for consultation. (<https://quality-link.eu/technical-specs/>).

- **Data Sources and Access Policy** (<https://specs.quality-link.eu/policy.html>)
- **Ontology Mapping** (<https://specs.quality-link.eu/resources/ontology.html>)
- **Application Profile (SHACL constraints)**
<https://specs.quality-link.eu/resources/ontology-shacl.html>
- **DESM Shared Mappings**
(<https://mappings.skilldata.info/mappings-list?abstractClass=Learning+Opportunity+Specification&cp=4>)
- **Course Identifier Specification** (https://specs.quality-link.eu/course_identifier.html)
- **Data Source Discovery Specification** (<https://specs.quality-link.eu/discovery.html>)
- **Data Sources and Access Policy** (<https://specs.quality-link.eu/policy.html>)
- **Data Exchange Specification** (https://specs.quality-link.eu/data_exchange.html)

All draft technical standards were written following the W3C guidelines and best practices and contributions can be made by members of the community at the source code repository. (<https://github.com/Knowledge-Innovation-Centre/quality-link-specs>)

Initial tagged release (1.0-alpha)

With the beginning of the activities in Work Package 5, all technical standards are moved from draft status to an initial tagged release (1.0-alpha) so that technical development may rely on a specific version of the standards to be implemented. The technical standards themselves will continue to be updated in accordance to the feedback from the wider community, practical experience obtained during implementation of data aggregation and any relevant changes in related standards.

The source files of all specification can be found on GitHub:

<https://github.com/Knowledge-Innovation-Centre/quality-link-specs>

Results and Reports

The report produced in this work package is attached here with its original layout.

Technical specifications are documented here as a copy of the content of the respective webpage. For the most recent versions and for better readability, please refer to the web resources through the above links.

Report on Task 3.2 Proposal of a Course Identifier and Task 3.5 Proposal of a Generic Trusted List Standard

Quality Data Exchange Architecture

Tasks 3.2 & 3.5 – January 2025

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Work Package

3 - Development of Technical Standards to support sharing of Quality and Course information

Version History

v0.1	Initial version for discussion	05/09/2024
v0.2	Revised version after Standards Consultation Board kick-off	11/11/2024
v1.0	Revised after SCB face-to-face meeting	13/01/2025

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Table of Contents

Introduction.....	10
Challenges.....	10
Objectives.....	11
Use cases.....	11
Principles.....	12
Overview of components.....	13
Policies.....	15
Objectives.....	15
Data sources.....	15
Data access and usage.....	16
Technical specifications.....	18
Unique course identifier.....	18
Course disambiguation service.....	22
Ontology.....	23
Conversion and mapping.....	26
Management and discovery of data sources.....	28
Data exchange.....	30

Introduction

The QualityLink project aims to empower stakeholders, including students, institutions, employers, and recognition information centres, by providing them with comprehensive and relevant quality data on courses and micro-credentials. This should help improve recognition decisions and allow learners to follow flexible learning pathways.

The project envisions contributing to a seamless and interoperable environment where quality information on study programs and micro-credentials is easily accessible and interoperable across diverse sources.

The project's guiding principles are:

- **Quality:** ensuring that all project endeavours adhere to the highest standards.
- **Competition:** as a positive force for driving continuous improvement and innovation.
- **Student-centric approach:** empower learners to navigate the diverse landscape and make personalised choices.
- **Transparency:** avoiding compound indicators and allowing the end user to make their own informed decisions.
- **Openness and inclusivity:** aggregating, sharing, and disseminating data.
- **Democratisation of quality data:** making it universally accessible and beneficial to a broad spectrum of stakeholders.

Challenges

Quality information on study programs and other courses is often dispersed throughout many different platforms and sites, and they are not interoperable. Through creating open standards and collaboration, the project aims to establish the infrastructure for aggregating quality information from a wide range of sources.

In particular, the project aims to address the following current challenges:

- Trust data is provided by existing tools, such as ETER, DEQAR or the EWP Registry, but only some of them are open and fully interoperable.
- Data might go to programme level, but this is not necessarily the case (e.g. only institutional accreditation). The module or course level is generally not covered.
- In existing data sources the programme level is less structured/managed than institutional level. It is thus difficult to link/connect data on the same programme/module/course from different sources.
- Institutions do generally not publish their own quality data (e.g. student survey results, grade distribution, ...) in a structured and open format.
- Other quality data (from third-party sources) is often published through their own tools/websites, but rarely as open data.

Objectives

The overall objective of the QualityLink project is to address gaps in the standardisation landscape for higher education which prevent the comparison of information on courses, by proposing and developing standards to meet these gaps.

The proposed standards aim to facilitate the exchange of quality data between higher education institutions (HEIs), quality assurance agencies (QAAs), ministries, recognition information centres (ENIC-NARICs), ranking bodies, professional associations, course directories and other stakeholders. The components should allow these stakeholders to publish their lists of courses and quality indicators in a standardised format, and to aid their scraping by web-tools and their inclusion in search and other comparison tools.

This document focuses on the technical architecture that is being designed and later tested by the QualityLink project. See the [overview of quality domains and indicators](#) for details on the type of data and indicators the project focuses on.

Use cases

The QualityLink project and the technical architecture have been designed with the following overarching use cases in mind:

- Allow (potential) learners to discover and compare learning opportunities, based on reliable information on them. Provide information to which courses they can enroll/register under which conditions.
- Provide universities/HEIs a central database to which they can deliver information on learning opportunities so that different partners can retrieve it easily, without having to create interfaces to every partner's system. Joint catalogues of learning opportunities by European University alliances are a specific scenario of this use case.
- Allow HEIs and other data providers to move back and forth between standards relatively easily and in a semi-automated manner.
- Enable data providers (HEI or other) to compare themselves to other HEIs in order to identify areas of improvement.
- Supply relevant information to HEIs, recognition information centres (ENIC-NARICs) and employers for their recognition decisions, e.g. when evaluating a potential student's credentials.
- Enable the aggregation of relevant crowdsourced data in the future¹.

¹ The architecture would allow any aggregator to crowdsource data themselves or include crowdsourced data, but this is not being explored in practice by this project.

Principles

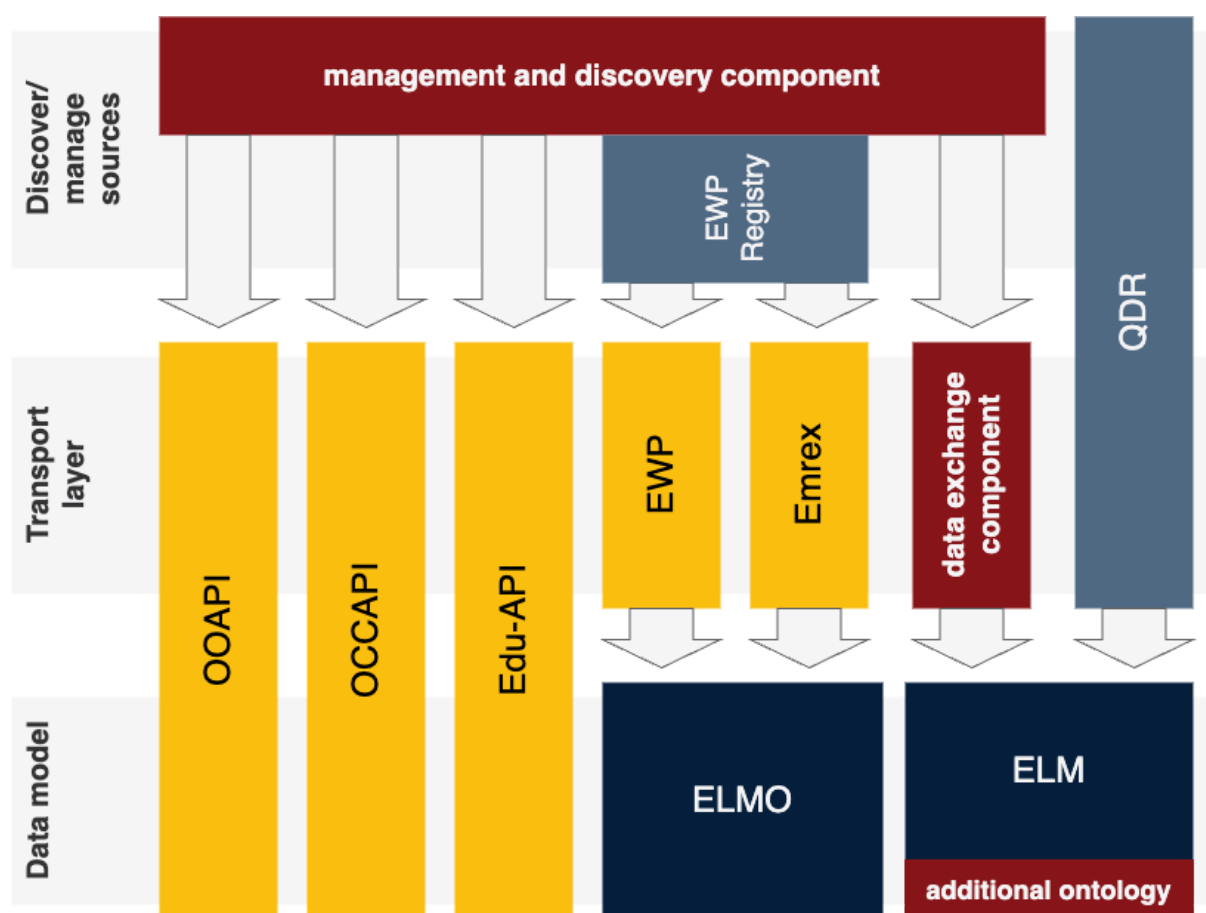
The proposed technical architecture should be guided by the following principles:

- **Seamless integration:** we aim to create an architecture that uses relevant existing standards and systems wherever possible, and integrates with them seamlessly.
- **Easy adoption:** we want to keep the bar low to promote adoption by HEIs and other data providers. That is, being minimalist when it comes to minimum requirements and, for example, allowing different routes for HEIs/other providers to expose their data where it is helpful.
- **Flexible:** we want to create a basic architecture that is not overly use-case-specific but supports a variety of current and possible future use cases.
- **Modular:** we want to design an architecture that is open to future extensions, e.g. to cover additional types of data or sources.
- **Scalable:** we want to design an architecture that is in principle scalable to thousands HEIs and other data providers.
- **Open source:** we will release all software developed as part of QualityLink as open source under the GPL, and all documentation (incl. standards, ontologies, etc.) under CC BY-SA.

Overview of components

Data on micro-credentials, courses and other learning opportunities is already covered by several established data standards. Most quality domains and indicators that QualityLink focuses on can be adequately represented by existing data standards, with the European Learning Model (ELM) offering the widest coverage. QualityLink will thus propose a **data model as an extension to ELM**, adding ontologies for indicators not covered yet.

Rather than focusing on a single data model or standard, QualityLink aims to use existing converters made by the community and to possibly create additional **converters to map/crosswalk** between data models. The project aims to design an interoperable architecture that functions with several widely used standards and data models.



Some of the existing standards provide APIs. For example, both the Open Education API (OOAPI) or the Edu-API include a data model and a defined data transport layer (in these cases a REST API).

Other standards, such as the European Learning Model (ELM), are a “pure” data standard and do not include such capabilities directly. Related to ELM, the Qualifications Dataset Register

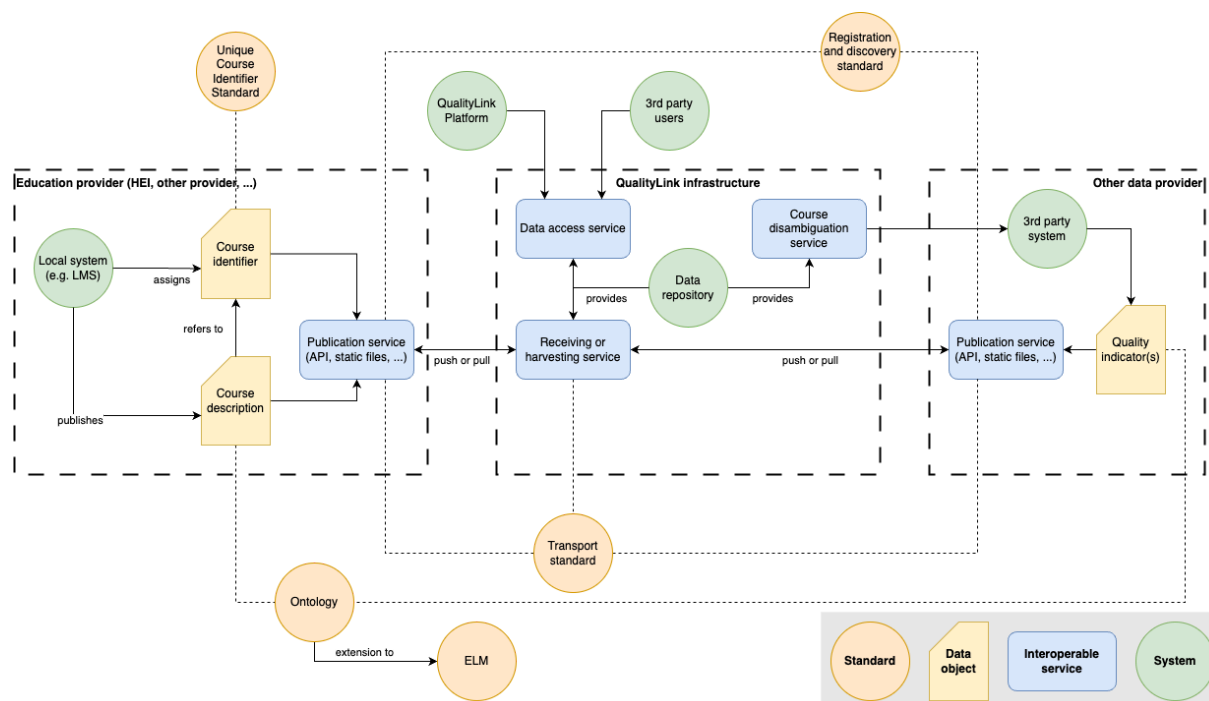
(QDR) defines serialisation formats as well as data transport options. These, however, mainly focus on data supplied by national authorities or their delegates.

Most existing standards do not include an approach for discovery and registration of data sources. That is, various APIs specify how higher education institutions can expose data through a standardised API or format, but do not specify how to find API endpoints that institutions expose.

The QDR aggregates data from ELM-based sources, but data sources themselves are managed manually; data can only be fed into QDR through the national level or by delegated authorities, not directly by HEIs. The EWP network includes a central registry of institutional APIs, but entries in the central registry are managed manually.

QualityLink aims to fill the gaps by specifying a **flexible data exchange/transport layer** for ELM-based data as well as a **scalable discovery mechanism** that allows higher education institutions to expose their data easily.

Although each existing standard accommodates a designated field for course identification, there is no harmonised system or format for identifying courses. In particular, there is no common understanding, terminology and business rules across standards. The QualityLink architecture thus includes a proposal for a **unique course identifier** that could be used across different systems and that is agnostic regarding data formats.



Policies

This discussion document focuses on technical architecture. Policies on key issues, however, influence some architectural choices and thus need to be defined beforehand to ensure that the architecture aligns with these policies.

The aim of QualityLink is not only to propose standards for data publication but also to pilot aggregation. Hence there is a need for a clear policy on data sources.

A policy on data use and sharing clarifies for education providers and other data sources how their aggregated data is available to the public and can be used.

Objectives

POL-1: As a user I want to be assured that the aggregated data is trustworthy and does not include flawed or rogue data.

POL-2: As a HEI I want to publish my course data without the need for endorsement or clearance by any other organisation.

POL-3: As a HEI I want to have clarity on how my data will be published and might be used.

POL-4: As the owner of a dataset I want clarity which data can be aggregated into the QualityLink dataset and platform.

POL-5: As a researcher or advanced user I want to access the QualityLink dataset under clear terms and conditions, in order to have legal certainty when copying, re-using or embedding QualityLink data in my own applications.

Data sources

The policy on data sources will determine the approach to managing data sources and providers. That is, it will clarify who will be allowed to publish what, or from which source the QualityLink aggregator will fetch which information.

Existing examples

Relevant existing initiatives handle this in different ways:

- The EU's QDR (see above) is based on national authorised representatives registering data sources. Registration of data sources is manual.
- The EWP network features a central registry of nodes and HEIs they cover. Registration of new nodes is manual.

- Data in DEQAR is provided by EQAR-registered agencies. Accounts for new agencies are manually created.
- Data in EHESO and OrgReg are aggregated from authoritative national sources manually.
- The US-based Credential Registry is based on organisations (e.g. HEIs) creating accounts which are manually verified by Credential Engine staff.

Approach

The policy will distinguish between three different types of data providers:

- **Authoritative sources** - may provide trusted data on any provider and their programmes/courses. This would include sources such as DEQAR, ETER or national authorities. Authoritative sources should be approved by the QualityLink consortium;
- **Education providers** (HEIs and others in the future) - may provide trusted data on their own programmes and courses. Any recognised education provider should be able to provide data without specific approval;
- **Other data sources** - may provide data on existing programmes/courses, but limited to specific domains. This would include ranking providers, etc.. For these data sources the QualityLink consortium should adopt an eligibility policy.

The technical specifications (see below) should ensure that education providers can decide to publish data and have it aggregated in the QualityLink platform without the need for manual intervention from the QualityLink consortium/admins or anyone else; other sources could be managed manually.

Data access and usage

The aggregated QualityLink dataset will be accessible through a prototype portal, as full download and through an API. The policy sets the terms and conditions for reusing the data. Related to this are also policies and conditions for using the API to access the QualityLink dataset.

Examples

The following examples can be found for similar datasets:

- DEQAR: data can be accessed and re-used without any conditions, pursuant to the [Open Data Commons Public Domain Dedication and Licence](#) (PDDL) - see [DEQAR Terms & Conditions](#). API is subject to registration, free for basic use but reserves the right to charge a fee for extensive or commercial use.

- ORCID: full data is released under [CC0](#), API can be freely used for any “non-commercial” use, i.e. data cannot be used in a paid service or revenue-generating product - [ORCID Public API Terms](#)
- CWTS Leiden Ranking: available under [CC Attribution 4.0](#)

Approach

In principle, it would be desirable to dedicate the aggregated QualityLink dataset to the public domain and impose no restrictions on using, copying or re-mixing.

At the same time, some HEIs and other upstream data providers impose constraints on the use of their published data, especially their detailed course descriptions.

Initially, to enhance compatibility with upstream data sources and maximise readiness to feed data into QualityLink, the terms of use should exclude commercial use and require attribution, i.e. release the dataset under CC Attribution-NonCommercial.

The QualityLink API should be available for public use with certain rate limits. In addition, non-commercial registered users (e.g. researchers, non-commercial platforms) could be granted access with higher rate limits.

In the long term, it could be discussed with HEIs and other data providers whether the aggregated data could be published for re-use under more permissive terms, such as CC0 or PDDL.

Technical specifications

Unique course identifier

Role

The unique course identifier should facilitate the identification and comparison of courses and allow for higher education courses to be tracked across multiple different systems and databases.

User stories

CID-1: As an education provider I want to publish and control authoritative identifiers for my courses.

CID-2: As a user I want to dereference a course identifier to a standardised description of the course, incl. other identifiers assigned to the same course.

CID-3: As a user I want to retrieve historical information (e.g. previous names and identifiers) or demographic information (e.g. course has been replaced by another course, course was discontinued, ...).

Fundamental challenges

The most significant challenge in course matching has to do with identifying a course across multiple data sets. In known processes involving course data, such as Learning Agreements, information is replicated as if copied on paper (despite the paperless workflows currently in effect) and the notion of programmatically retrieving data in a digital format is no more than an afterthought.

As such, it is important to establish a methodology that would allow identifying any given course (to be understood as a Learning Opportunity) as offered by any given institution.

Course vs. Offering/Instance

Most existing data models and standards for course descriptions distinguish between a course as a long-lived specification of a learning opportunity and a course offering or instance, referring to the course being offered in one specific semester (or academic session more generally). Potentially, there could also be several offerings during a single period of time, referring for example to different languages in which the same course is offered or to different modes (e.g. on-line vs. on-site).

The following table illustrates how these concepts are named in different existing standards:

	Course/Specification	Offering/Instance
ELM v3	Learning Achievement Specification	Learning Opportunity
OOAPI v5	Course (Program)	Course (Program) Offering
Edu-API	Course Template	Course Offering
EWP Courses	Learning Opportunity Specification	Learning Opportunity Instance
OCCAPI	Course	<i>(not modelled)</i>
DEQAR	Programme	<i>(not modelled)</i>

In the context of the QualityLink project, the focus is on the course as a long-lived, stable unit, and not on the offering/instance.

Who offers the course?

Any institution offering a course must be reliably identifiable. In the case of Higher Education Institutions, particularly in Europe, there are many identifiers available, all serving any particular purpose (Erasmus codes, PICs, OIDs, etc.) often related to the Erasmus+ programme. However, a more generic way to identify an organisation offering courses would be ideal, so as to broaden the scope of learning opportunities beyond the classic study programme model.

Changes in identity

Although not a very common occurrence, institutions tend to change over time, leading to splits and mergers, rebranding and similar processes, which may lead to changes in the way they identify themselves. As such, keeping track of such changes would be paramount for a reliable method of identification over time.

This problem is not necessarily within the scope of the project, but it must be noted.

Key requirements

It should be assumed that any organisation offering learning opportunities will have their own internal system for their identification, and the particulars of such systems are not necessarily of interest to the current work. However, some core requirements must be met:

- Each course identifier must be unique within the organisation. Ideally they should “survive” mergers or other demographic changes, e.g. using mechanisms such as [previous-schac](#) in EWP.
- Course identifiers must not be recycled, i.e. assigned to different courses.

- Course identifiers may change over the lifetime of a course (e.g. as a result of mergers or internal reorganisation). The information obtained when dereferencing an identifier should/must(?) indicate the previous identifier(s) of the same course. The previous identifiers must remain dereferenceable and redirect/point to the new identifier.
- Each individual combination of workload and learning outcomes must be treated as a separate learning opportunity.

Existing standards

There is no existing universal (Europe-wide or cross-national) system for a standardised and resolvable notation of programme or course identifiers.

Naturally, several existing standards include some form of identification of programme and course objects:

- OOAPI and CTDL identify all objects by a UUID-based identifier, including courses and programmes. In addition, OOAPI for example allows the expression of existing codes for programmes as well as courses, but scoped to the offering institution and without a standardised format.
- OCCAPI recommends UUIDs as identifiers of courses, but allows any arbitrary identifier scoped to the offering institution.
- ELM allows the expression of arbitrary identifiers for programmes and courses.
- EWP expects unique [identifiers](#) scoped to an institution and also recommends UUIDs as [surrogate keys](#).

As regards national systems, Q to experts: which should we investigate as possible role models?

Suggested approach

In order to uniquely identify a course, the most reliable path would be to tackle the issues in two ways:

- identify the course within the organisation;
- identify the organisation itself.

This mirrors the approach of the [European Student Identifier](#) for identifying students.

Identifying a course within an organisation

Whatever method a particular organisation may use to identify its courses internally, it is sufficient that this method guarantees that identifiers are kept unique, i.e. not “recycled” to identify different courses at different times.

In principle, a universal approach to course identification must allow for any kind of internal identification system within an organisation, as imposing changes to already existing systems would cause too much friction and hinder adoption.

Identifying an organisation

An organisation can be identified in many different ways, depending on the context (for example in the Erasmus+ context one may find several types of institutional identifiers), so ultimately it would be desirable to adopt a method that would remain consistent across different contexts.

Various supra-national standards exist for identifying institutions:

- SCHAC (used in European Student Identifier, EWP)
- ETER ID (used in EHESO, OrgReg, DEQAR)
- WHED ID
- Erasmus code

In this sense, the concept of a SCHAC code as used in higher education is very interesting. The SCHAC code is essentially a domain name, which is necessarily unique and owned by the organisation itself. It is currently used in Erasmus Without Paper (EWP) but its application can go well beyond that environment. The [HEI API](#) provided by EUF gives access to information on SCHAC codes currently in use in the EWP network or in eduGAIN, as well as other (hypothetical) SCHAC codes of HEIs holding an Erasmus charter.

One challenge of SCHAC codes is that they may change if the institution's domain name changes. Even though not very frequent, these changes happen and are currently not available in the HEI API (partial records exist, but are currently not exposed in a practical way). Moreover, mergers of institutions or other demographic events are currently not tracked by the HEI API.

In this regard it could be helpful to additionally leverage [OrgReg](#) and the unique entity IDs it maintains for institutions. These remain stable regardless of name, domain name/website or other changes. OrgReg also systematically tracks demographic events, such as mergers of institutions, although the dataset may not be complete.

Proposed format: URN

From [Wikipedia](#):

A Uniform Resource Name (URN) is a Uniform Resource Identifier (URI) that uses the urn scheme. URNs are globally unique persistent identifiers assigned within defined namespaces so they will be available for a long period of time, even after the resource which they identify ceases to exist or becomes unavailable. URNs cannot be used to directly locate an item and

need not be resolvable, as they are simply templates that another parser may use to find an item.

Inspired by the [European Student Identifier](#), part of the [European Student Card Initiative](#).

The URN format `urn:<NID>:<NSS>` requires defining:

1. A namespace (NID) registered with IANA:
<https://www.iana.org/assignments/urn-namespaces/urn-namespaces.xhtml>
 - a. Q: would this fit within the SCHAC namespace?
<https://www.rfc-editor.org/rfc/rfc6338.html>
2. A syntax for the namespace specific string (NSS)
 - a. Including the SCHAC code of the institution at the time of ID assignment
 - b. Including a unique identifier for the resource within the institution
 - c. With all non ASCII characters percent-encoded

Other avenues to explore: DID

The [Decentralized Identifiers](#) (DIDs) approach was suggested in relation to course identification. The DID specification goes beyond identifiers in a narrow sense and standardises a DID Document, which must be resolvable for every DID.

The DID Document can notably include public key material and service endpoints related to the entity identified by the DID. The latter could be of interest for a course identifier, e.g. the DID Document could describe the service endpoint that provides data on the course.

DIDs are based on a registry of DID methods, each of which specifies how a DID is resolved to a DID Document. A popular method for institutional DIDs, i.e. where no privacy matters are involved, is the [did:web Method Specification](#). A `did:web` is simply resolved by retrieving a DID Document from a URL under the domain that is part of the DID.

While most features of DIDs are not directly needed for course identification and using DIDs as a native identifier might be overly complex, it would be thinkable that each course identifier could *also* be expressed as and be resolvable as a DID.

For example, `urn:schac:uniqueCourseId:uni-lj.si:ABCD1234` could be expressed as `did:web:did.quality-link.eu:uni-lj.si:ABCD1234`. This could be resolved by a simple service implemented at <https://did.quality-link.eu>, generating DID Documents for known courses.

Course disambiguation service

Role

Existing datasets will not necessarily use the unique course identifier immediately. In order to facilitate their integration into the ecosystem it could be desirable to offer a disambiguation or matching service that would allow discovery of identifiers for existing lists.

User stories

CDS-1: As a data provider I want to match my existing dataset and discover the official identifiers for courses identified by name or another identifier.

CDS-2: As a user or data provider I want to use a reference list of courses including their identifiers. (For example, when building an application.)

Approach

It should be discussed during the course of the project whether a disambiguation service will be necessary and feasible.

Ontology

Role

A standardised ontology would be at the heart of the proposed architecture. It should cover basic course data as well as the [quality indicators to be covered](#) within the project.

User stories

ONT-1: As a HEI or data provider I want to publish data in a clearly defined and understandable way.

ONT-2: As a user, I want to obtain clear definitions for the data I can access.

Key requirements

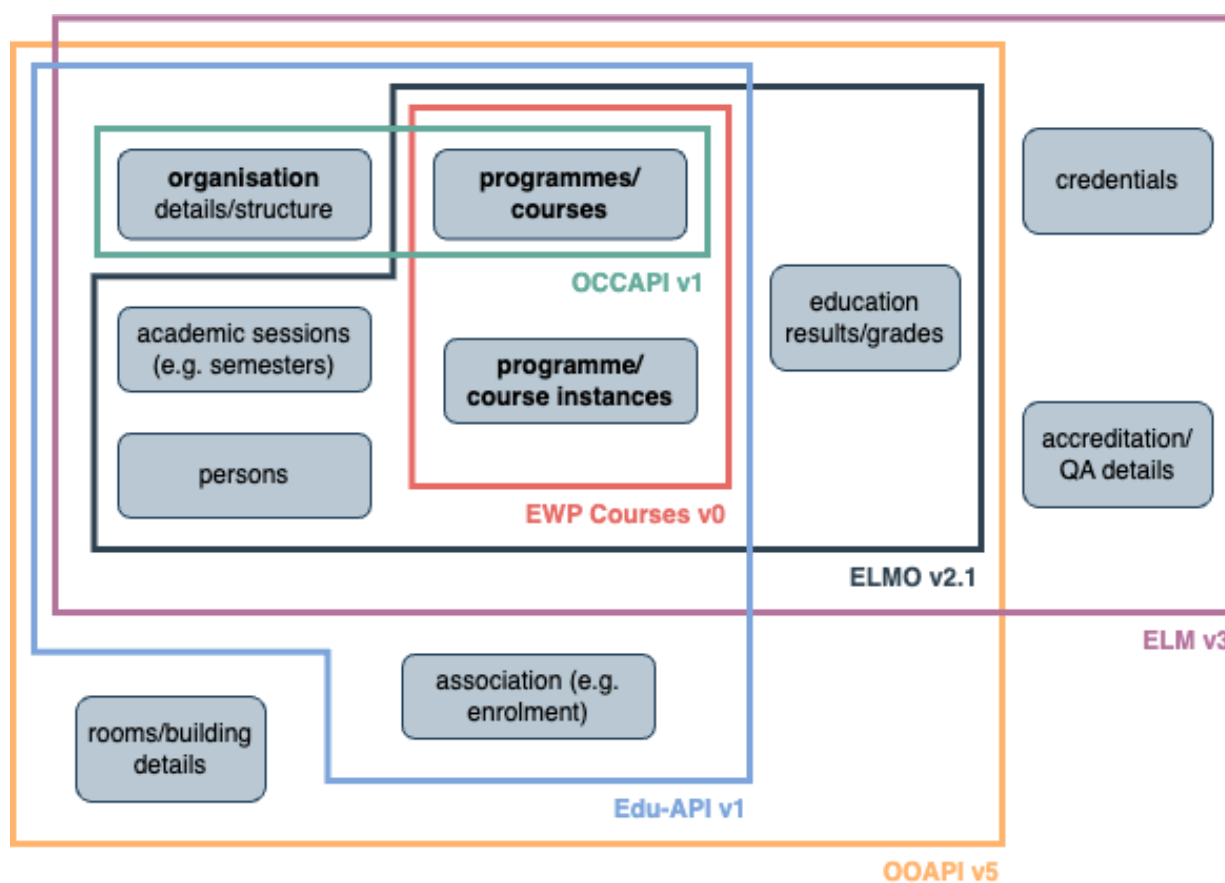
It would not be reasonable to expect existing data sources to adopt a new or different ontology as their native data model. Hence the ontology should be designed such that existing data can be mapped to it easily.

To that end the ontology should be as simple as possible for the purposes envisaged by the project; it should not be overly detailed or nuanced on matters that are not of key importance.

The ontology should be easily extendable to cover new domains and types of information.

Existing standards

There are several existing data models and API standards that specify descriptions of basic course data. The following illustration and table provide an overview of the different domains covered by those:



Name	Description	Maintained by	Technical approach
European Learning Model (ELM)	used in the context of the European Digital Credentials for Learning (EDC) or the Qualification Dataset Register (QDR)	European Commission, DG Employment	RDF ontology and application profiles

ELMO	Based on the CEN standard EN 15981-2011 EuroLMAI and used in Emrex.	Emrex	XML schema
EWP Courses API		EWP consortium	XML schema
Open Course Catalogue API (OCCAPI)	inspired by EWP APIs	EUf	REST API + JSON schema
Open Education API (OOAPI)	specification developed by Dutch HEIs and used in some European University alliances; significant overlap/similarity to Edu-API but covers additional domains	SURF & Community	REST API + JSON schema
Edu-API	candidate specification inspired by different existing 1EdTech standards	1EdTech	REST API + JSON schema
Database of External Quality Assurance Results (DEQAR)	aggregates standardised information on quality assurance results from European QA agencies	EQAR	REST API + JSON schema
European Higher Education Sector Observatory (EHESO, previously ETER) & OrgReg	maintains basic institutional descriptors and aggregates statistical data on HEIs from national sources	EHESO consortium on behalf of European Commission	REST API + JSON schema
Credential Transparency Description Language (CTDL)	developed by a US-based think tank and used for its Credential Registry	Credential Engine	RDF ontology

A detailed comparison which basic data and indicators are modelled by the most relevant existing standards is available in a [separate spreadsheet](#).

Approach

Considering that it describes/models the widest range of data and indicators already, the ELM is the most suitable starting point. Moreover, it is a genuinely European initiative, sponsored officially by the EU and used for various EU-sponsored initiatives.

From a technical perspective, as an RDF ontology the ELM is open to extend where needed.

The QualityLink architecture should thus use and extend ELM: that is, use ELM terms where they exist and define additional ones where needed. This would roughly imply that ELM can be used as is for the following information:

- Basic course data - fully covered by ELM
- Quality assurance data - covered by ELM (if needed, define additional terms or nuances based on DEQAR)
- Quality indicators - already be covered by ELM:
 - Grade distribution
 - Recognition agreements/history

One important dimension that is not covered by ELM is information to whom a certain course is available for enrolment, e.g. whether it is available to specific learner groups only. This information is especially relevant if data is used to populate a joint catalogue of learning opportunities for a European University alliance, for example. A standardised way of describing this should be part of the QualityLink ontology.

The ELM was not designed to model statistical data on courses or study programmes. Hence it is not surprising that several quality indicators are not modeled by the ELM and an additional ontology would need to be developed. This should include an abstract class of a quality indicator as well as specific models for some the quality indicators considered in the project:

- Demand for skills
- Stackability
- Platform QA
- Active learning methodologies used
- Availability of tutoring or mentoring
- Student/staff ratios
- Assessment methods used
- Virtual learning environment
- Make-up/diversity of the student body
- Recognition of prior learning
- Learner support services
- Eligibility for grants / loans
- Student ratings/satisfaction
- Graduation rate
- Student/graduate performance
- Expertise of lecturers
- Rankings
- Network memberships

Within the QualityLink project it will not be feasible to develop an ontology for all those areas. The focus should be on those indicators that are found to be most relevant and feasible in the ongoing feasibility analysis and stakeholder ranking.

For any additions developed, relevant existing systems/standards (see above) and their data models should be taken into account, also where not published as RDF ontology.

For those additions that would fit into the scope of the ELM, the ontologies developed by the QualityLink project should also be submitted as proposals for future extensions of the ELM.

Conversion and mapping

Role

In an ideal world, each data source/provider would map their data to the “ELM+QualityLink” ontology. For existing data standards in wide use it would, however, be helpful to have a conversion/mapping service or library available so that different providers using the same data model do not have to re-do each other’s work.

User stories

MAP-1: As an education provider or data source I want to be able to use my existing tools and standards to publish/send my data in a widely-used format.

MAP-2: As an aggregator I want to be able to consume data available in a variety of formats.

Existing examples

The T3 Innovation Network created a Data Ecosystem Schema Mapper (DESM: [GitHub repo - project page](#)). Credential Engine host a [DESM instance and provide a mapping for various micro-credential-related data standards](#), including ELM, CTDL and Open Badges among others. These could be used to build a conversion service.

[OERSI](#) is an initiative to index and aggregate metadata from various repositories of open educational resources. The project has created a [substantial number of data importers and mappings](#) from different data sources. These could be used to inspire a data conversion and mapping service, or even be partially re-used.

Approach

For pragmatic reasons, conversion/mapping for some highly relevant data standards should be developed by QualityLink itself. We should namely consider the following existing data models and standards:

- OOAPI
- OCCAPI

- Edu-API
- EWP Courses API
- DEQAR
- ELMO (check existing converter)
- Schema.org

NB: As ELM would be the reference ontology used in QualityLink, no mapping is needed.

The [detailed comparison spreadsheet](#) (see also under Ontology above) can be used as a basis to inform the mapping, next to DESM or OERSI where applicable.

In addition, it should be possible and encouraged that third parties create additional converters or mappers, and make them available to the community.

Management and discovery of data sources

Role

A standard for data discovery should specify how HEIs and other data providers can indicate from where their data can be harvested for aggregation.

User stories

DIS-1: As a HEI or education provider I want to advertise my data source to a Europe-wide aggregator in a secure way, but without the need for additional action or manual intervention by another organisation.

DIS-2: As a QualityLink administrator I want to manage trusted sources and other data providers whose data should be integrated in the QualityLink platform.

DIS-3: As a data provider I want to access a dashboard or similar to manage my data sources and get insights/stats on how my data was harvested and processed.

Existing standards

- ELM itself does not address the transport layer. The QDR uses RDF serialised as XML, which can be manually uploaded, hosted by the data provider and regularly pulled, or pushed by the data provider.
- Edu-API, OOAPI and the OCCAPI define a REST API to expose the information in JSON format.
- The EWP Courses API defines an XML schema in which a list of courses should be returned.

- DEQAR and the Credential Registry each allow submission of data through manual entry, upload of a CSV file or use of a JSON-based REST API.

Approach

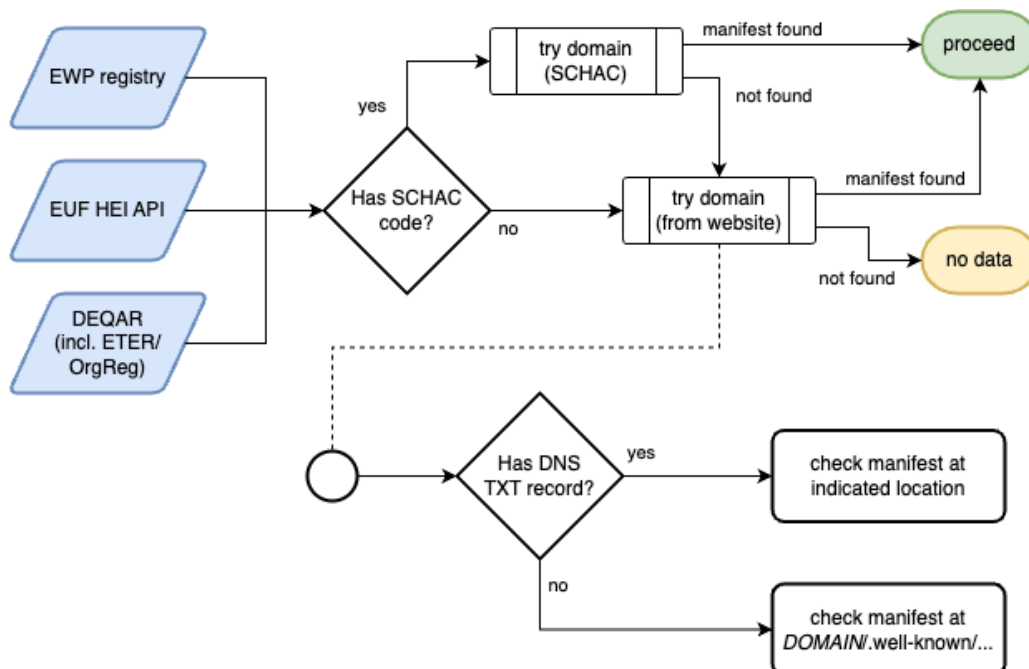
The approach should be as flexible and as easy to adopt as possible for HEIs and other data providers.

The approach should be scalable. Hence, data sources of HEIs need to be discovered automatically and without manual registration or intervention, in line with the policies defined above. (Authoritative sources and other data sources are managed manually, as each case will need to be screened against the applicable policies.)

Discovery of data from education providers/HEIs should be based on data from the EWP Registry, the EUF HEI API and DEQAR (which includes all HEIs listed in ETER and OrgReg).

The location of one or several data files or API endpoints (see [Data exchange](#) below) could be indicated in a simple, standardised “manifest” file published by the HEI. The specification for the manifest file should be extensible, so that additional options for making available course data or advertising of other APIs could be using the same spec.

For authoritative sources and other data sources, the location of the manifest file can be managed manually.



For HEIs, the location of the manifest file needs to be standardised or discoverable in a standardised way. Two options would be available to HEIs:

- a DNS TXT record containing a URL;

- a .well-known URL, e.g. of the form <https://www.example.org/.well-known/quality-link-manifest>.

The discovery mechanism should attempt to discover a manifest file under a known official domain of the HEI, for example in the following order:

- the domain/host name that is the HEI's SCHAC code (for HEIs part of the EWP network or appearing in the EUF HEI API);
- the host name of the HEI's website (as indicated in OrgReg or DEQAR);
- the highest level registrable domain name from that address (i.e. public suffix + one further DNS component).

Data exchange

Role

A standard for data transport should specify how HEIs and other data providers can make data available for aggregation.

User stories

TRL-1: As a HEI I want to feed my data into a Europe-wide aggregator easily and flexibly, in order to avoid unnecessary burden.

TRL-2: As a data aggregator I want to aggregate data from HEIs and other sources efficiently, i.e. avoiding too much overhead or redundant data transfers.

TRL-3: As a data provider (HEI or other) I want to ensure that only the QualityLink platform (or other specified aggregators) can harvest my data.

Existing standards

- ELM itself does not address the transport layer. The QDR uses RDF serialised as XML, which can be manually uploaded, hosted by the data provider and regularly pulled, or pushed by the data provider.
- Edu-API, OOAPI and the OCCAPI define a REST API to expose the information in JSON format. Edu-API also plans additional bindings, e.g. async and message queues.
- The EWP Courses API defines an XML schema in which a list of courses should be returned.
- DEQAR and the Credential Registry each allow submission of data through manual entry, upload of a CSV file or use of a JSON-based REST API.

Approach

In principle, it would be desirable to offer HEIs and other data providers to choose between a push or pull strategy for data transport. For simplicity, only a pull approach should be implemented within the QualityLink project. A push option could be realised later.

In order to be flexible, different ways of data transport should be provided. The following two should be explored during the project:

- Data provider exposes a standardised API (e.g. similar to OOAPI or OCCAPI)
- Data provider hosts a static file (e.g. similar to QDR)

Changes in data should be handled and indicated in such a way that repeated transport of unchanged data is avoided as far as possible. In a pull approach, each option should include a way of indicating last modification or listing/fetching only resources created/modified since a given time.

Data providers could implement access control in three ways:

- limit access **based on IP address**: this is straight-forward by publishing the IP address (range) used by the QualityLink aggregator;
- authentication based on **HTTPS client certificate**: the QualityLink aggregator could authenticate itself with a specified certificate;
- specify a **HTTP header** to be included in all requests (e.g. a token): this option requires the data provider to have an account in the QualityLink aggregator/data source registry to manage this.

End of Report:

Quality Data Exchange Architecture

Tasks 3.2 & 3.5 – January 2025

Annex

The following pages document the online resources developed in Work Package 3. For the most up-to date specifications and guidelines, please consult the QualityLink website at <https://quality-link.eu/project-outputs/> and GitHub at <https://github.com/Knowledge-Innovation-Centre/quality-link-specs>

Technical Specifications

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

Project output

Technical Specifications

What this page is

This page explains what the QualityLink consortium published, why it matters, and where to read the full specifications. If you're deciding whether to adopt a QualityLink-compatible standard, or you want to understand what was built, start here.

If you're ready to connect your institution's data, go to the [technical guide](#) instead.

What the specifications cover

QualityLink published an open set of technical specifications for sharing quality data on higher education courses and micro-credentials across Europe. They define how institutions can publish course data, how that data can be discovered and aggregated, and what format it should take.

The specifications build on existing European standards — in particular the European Learning Model (ELM) — and extend them only where genuinely needed. They are open, free to use, and hosted on GitHub ([Knowledge-Innovation-Centre/quality-link-specs](https://github.com/Knowledge-Innovation-Centre/quality-link-specs)).

The five specifications:

1. Data sources and access policy

Sets out the terms under which data is aggregated and made available. Covers licensing, attribution, and permitted uses.

[Read the policy](#)

2. Ontology and application profile

Extends the European Learning Model (ELM) with additional properties useful for alliance catalogues and micro-credential recognition. The application profile defines the minimum data required to participate.

Browse the ontology: specs.quality-link.eu/resources/ontology.html

Application profile (SHACL): specs.quality-link.eu/resources/ontology-shacl.html

[Browse the ontology](#)

[Browse the application profile \(SHACL\)](#)

3. Course identifier specification

Proposes a common format for unique course identifiers that works across [ELM](#), [OOAPI](#), [Edu-API](#), and [OCCAPI](#). This makes it possible to match data from different sources to the same course.

[Read the spec](#)

4. Data source discovery specification

Describes how the aggregator automatically finds data sources published by institutions — no manual registration required. Institutions publish a manifest file; the aggregator finds it via DNS or a well-known URL.

[Read the spec](#)

5. Data exchange specification

Defines the formats in which institutions can make data available: [ELM](#) (RDF static file), [OOAPI](#), [Edu-API](#), and [OCCAPI](#). Covers incremental updates, access control, and data normalisation.

[Read the spec](#)

How QualityLink maps to existing standards

We mapped ELM, OOAPI, Edu-API, OCCAPI, and related ontologies to identify gaps, overlaps, and conversion paths. All aggregated data is normalised to ELM regardless of source format.

[Explore the DESM mapping tool](#)

Specifications repository on GitHub: [Knowledge-Innovation-Centre/quality-link-specs](#)

Who the specifications are for

- Higher education institutions considering exposing their course catalogue
Choose the right data standard, understand the minimum data requirements, and validate your data before connecting to the aggregator.
- European University alliances building a joint course catalogue
See how member institutions can expose data in different formats and still produce a unified catalogue, with all data normalised to ELM.
- Standards bodies and policy organisations
Understand how QualityLink extends ELM, how it relates to HEIF use case 1 (“Discover”), and where there are open questions for future standardisation work.
- Developers and data architects
Find the technical detail you need. Then go to the technical guide to connect your data.

[Technical guide](#)

Questions or feedback

If you have questions, spotted an issue, or want to discuss adoption:

- Open an issue on GitHub: [Knowledge-Innovation-Centre/quality-link-specs](#)
- Email: contact@quality-link.eu

Ready to connect your data? Read the technical guide to get your institution’s courses into the aggregator.

[Technical guide](#)

[Consult the step-by-step guide](#)

[Create an Issue on GitHub](#)

Using the aggregator: Technical Guide

<https://quality-link.eu/use-the-aggregator/technical-guide/>

Step-by-Step Guide

Technical Guide

What you'll do on this page

This guide walks you through connecting your institution's course data to the QualityLink aggregator. By the end, your courses will appear in the European catalogue at courses.app.quality-link.eu.

Before you start, you'll need

Course data in a supported format – ELM, OOAPI, Edu-API, or OCCAPI – or the ability to export to one of these.

Access to publish a manifest file on your institution's domain, or the ability to create a DNS TXT record.

Access to the QualityLink dashboard to trigger and verify aggregation.

Not sure whether to use the hosted platform or deploy your own instance? Read the guide for decision-makers first.

Guide for decision-makers: quality-link.eu/use-the-aggregator/for-decision-makers/

Six steps to get your data live

Step 1 Publish your course data in a supported format

Choose one of the four formats. If your institution already uses one, start there.

- **ELM – European Learning Model** · Supported (v3)
Serve an RDF file aligned with the QualityLink application profile. Maximum semantic richness; direct alignment with European Digital Credentials.
Application profile (SHACL): specs.quality-link.eu/resources/ontology-shacl.html
Validate your data: shacl-play.sparna.fr/play/validate
- **OEAPI** (formerly OOAPI) · Supported (v5 and v6)
Expose OEAPI endpoints. The aggregator fetches course data in real time.
OEAPI specification: oeapi.eu
- **Edu-API** · Supported (v1)
Implement Edu-API endpoints as specified in the QualityLink data exchange

specification.

Edu-API specification: 1edtech.org/standards/edu-api

- **OCCAPI** · Work in progress

OCCAPI support is being finalised. Contact us before starting an OCCAPI implementation.

OCCAPI specification: occapi.uni-foundation.eu

You can use more than one format within an alliance. All data is normalised to ELM during aggregation, regardless of source format.

Step 2 Configure access control (optional)

Your course data is public by nature, but you can restrict which systems access it.

- **IP address whitelist**

The QualityLink aggregator operates from IP address 63.179.152.42. Configure your server or firewall to allow requests from this IP.

- **Encrypted secret token**

Download the aggregator's public key and encrypt your secret. Place the encrypted secret in your manifest file – the aggregator will send it as an HTTP header with every request.

Check the documentation:

specs.quality-link.eu/data_exchange.html#access-control-header

Download public key: backend.app.quality-link.eu/api/v1/public-key/pem

- **OAuth 2.0 Client Credentials Grant**

Communicate encrypted OAuth credentials in your manifest file or communicate them to the QualityLink team separately.

Check the documentation:

specs.quality-link.eu/data_exchange.html#access-control-oauth

Step 3 Create a manifest file

The manifest file tells the aggregator where your data is, what format it's in, how often to refresh it, and whether authentication is required. It's a small JSON or YAML file.

Use the Manifest Builder tool to generate yours, or write it manually using the data source discovery specification.

Manifest Builder tool: dashboard.app.quality-link.eu/manifest-builder

Data source discovery specification: specs.quality-link.eu/discovery.html#manifest

Step 4 Publish the manifest file on your domain

Place it at one of these well-known URLs on your institution's domain:

- <https://YOUR.DOMAIN/.well-known/quality-link-manifest>
- <https://YOUR.DOMAIN/.well-known/quality-link-manifest.json>
- <https://YOUR.DOMAIN/.well-known/quality-link-manifest.yaml>

Or publish it elsewhere and create a DNS TXT record pointing to it:

```
v=qldiscover1; m=https://YOUR.OTHER.DOMAIN/PATH/TO/MANIFEST
```

Step 5 Trigger aggregation and verify

In the dashboard, trigger a refresh of your manifest file. The dashboard shows whether the manifest was found and parsed correctly.

Once confirmed, trigger a refresh of your data sources. Your data will be fetched, processed, and indexed within a few minutes.

Go to the dashboard: dashboard.app.quality-link.eu/

Step 6 Check your courses in the catalogue

After indexation, your courses appear in the European catalogue. Search for your institution to verify.

If courses are missing or incorrect, return to the dashboard — it shows aggregation status and any errors in detail.

European course catalogue: courses.app.quality-link.eu/

Implementation options

Three options for running the aggregator — separate from how you publish your data in step 1.

Option A: Hosted QualityLink aggregator (recommended)

Free. No infrastructure. Start immediately.

Use the shared QualityLink aggregator and catalogue. We run the infrastructure.

Limitation: you can't modify the aggregation software directly, though you can configure most behaviours via the manifest and dashboard.

Option B: Your own instance of the aggregator

Full control. Higher maintenance.

Fork the aggregator repository and deploy on your own infrastructure.

Source code: see [Knowledge-Innovation-Centre/quality-link-infra](https://github.com/Knowledge-Innovation-Centre/quality-link-infra) on GitHub

Option C: Build your own custom aggregator

Maximum flexibility. Significant development effort.

Build your own aggregation pipeline using the QualityLink specifications as a reference. Only if the QualityLink aggregator doesn't meet your needs.

Public catalogue options

How you expose aggregated data to users is a separate decision from aggregation.

- **Hosted QualityLink catalogue:** available immediately, no infrastructure, institution and alliance filters available.

- **Self-deployed catalogue:** fork the course catalogue repository and customise branding. See [Knowledge-Innovation-Centre/course-catalogue](#) on GitHub
- **Custom frontend:** build your own catalogue UI using the aggregator's API. Requires the most effort but gives complete control.

What's supported right now

Last updated: 31 May 2026. Check the [Knowledge-Innovation-Centre/quality-link-infra](#) GitHub repository for the most current status.

Data Source Discovery Specification	
DNS TXT record	supported
.well-known locations	supported
Domain from SCHAC code	supported
Domain from website	supported
Domain from website, www. stripped off	supported
Highest level registrable domain name	on hold
Data Exchange Specification	

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

Where to go next

Check your manifest and aggregation status

Dashboard: dashboard.app.quality-link.eu/

Read the full technical specifications

Technical specifications: quality-link.eu/technical-specs/

Share context with a manager or director

Guide for decision-makers: quality-link.eu/use-the-aggregator/for-decision-makers/

Using the aggregator: Guide for decision-makers

<https://quality-link.eu/use-the-aggregator/for-decision-makers/>

Using the aggregator

Guide for decision-makers

Is this page for you?

This page is for people deciding whether their institution or alliance should participate in QualityLink. You don't need to be technical. Your IT team will handle the implementation – this guide helps you understand what you're agreeing to, what you'll get, and what to expect.

If you're the developer who'll actually connect the data, go straight to the [technical guide](#).

What QualityLink built

QualityLink developed a shared European infrastructure for publishing and aggregating course data. In plain terms: your institution publishes its course information in an open, standard format, and it automatically feeds into a Europe-wide catalogue that anyone can search.

Think of it as making your courses findable – across borders, across systems, without extra costs or proprietary platforms.

Three components work together

A common language. A standard way to describe courses and micro-credentials, based on the European Learning Model (ELM).

The data aggregator. Software that automatically collects course data from participating institutions and keeps it up to date.

The course catalogue. A searchable Europe-wide platform where students, researchers, and employers can discover learning opportunities.

Why participate

- **Europe-wide visibility**

Your courses appear in a shared European catalogue. Students and employers searching for micro-credentials across EU member states will find you.

- **No cost, no new infrastructure**

The hosted QualityLink platform is free of charge, run on a non-profit basis. You don't need new servers, contracts, or licences.

- **Alignment with European Digital Credentials**

Publishing in ELM aligns your data with European Digital Credentials (EDC) – the standard for digital degrees. If you later issue digital credentials, the groundwork is already done.

- **Alliance course catalogues**

If you're part of a European Universities alliance, you can use QualityLink to power your joint course catalogue – one place for students to discover courses across the whole alliance.

- **Open data**

Aggregated data is available as an open dataset under the CC BY-NC licence. Other institutions can benchmark their offer, and developers can build new tools on top of it.

Two ways to participate

Option A: Use the hosted QualityLink platform (recommended)

Your institution publishes its course data in a supported format. The aggregator finds it automatically and feeds it into the shared European catalogue. We run the infrastructure – you just publish your data and manifest.

Best for: institutions that want to participate quickly with minimal IT effort.

Cost: Free of charge. Run on a non-profit basis by the Knowledge Innovation Centre.

Your data: stays on your own systems. The aggregator reads it; you control what you publish.

Long-term: KIC is committed to keeping the platform available for the European higher education community.

Option B: Deploy your own instance

Your institution runs its own copy of the QualityLink aggregator on your own infrastructure. Full control over the aggregation process, branding, and data.

Best for: large alliances with specific customisation needs and strong technical capacity.

Cost: Free to download, use and adapt (Apache 2.0 license). You cover your own hosting and maintenance.

Source code: [Knowledge-Innovation-Centre/quality-link-infra](https://github.com/Knowledge-Innovation-Centre/quality-link-infra) on GitHub

Our recommendation: start with the hosted platform. It's the fastest way to participate, and you can always move to your own instance later.

How to get started: four phases

Most institutions move through phases 1 and 2 in a few weeks, with IT involvement mainly in phase 3.

Step 1 Plan (your team, a day or two)

Decide scope: which courses will you include? All offerings, a pilot selection, or courses dedicated to alliance students?

Identify your IT contact – the person who'll implement phase 3.

Check whether you already use ELM, OOAPI, Edu-API, or OCCAPI. If yes, phase 3 is straightforward.

Step 2 Prepare (your IT team, a few days)

Check your local systems hold the minimum required data: title, learning outcomes, language of delivery, thematic area (ISCED-F 2013).

Decide whether learners should be able to click through to your enrolment portal. If yes, those links need to be part of your data.

Step 3 Deploy (your IT team, a few days)

Publish your course data in a supported format ([ELM](#), [OOAPI](#), [Edu-API](#), or [OCCAPI](#)).

Publish a [manifest file](#) so the aggregator can find your data.

Log in to the [dashboard](#), trigger a data refresh, and verify your courses appear correctly.

Your courses are now in the European catalogue at [courses.app.quality-link.eu](#).

Go to the dashboard: [dashboard.app.quality-link.eu](#)

Step 4 Optimise (ongoing)

Monitor the dashboard to check data quality.

Expand to more courses as confidence grows.

Use the joint catalogue for further use cases – for example, cross-alliance enrolment.

What happens to your data

Your data stays on your own systems. The aggregator reads it from your published endpoint and copies it into the shared dataset. You control what you publish; you can update or remove it at any time.

Aggregated data is published as an open dataset under the Creative Commons Attribution-NonCommercial 4.0 International (CC-BY-NC) licence.

Read the data and access policy: [specs.quality-link.eu/policy.html](#)

Will this still be available after the project ends?

Yes. QualityLink concluded in May 2026, but the Knowledge Innovation Centre (KIC) is committed to keeping the hosted aggregator and catalogue available for the European higher education community.

All software and specifications are open source and will remain freely available.

Ready to move forward?

Share the technical guide with your IT team, or contact us if you have questions before you start.

Technical guide for your IT team: quality-link.eu/use-the-aggregator/technical-guide

Contact us: contact@quality-link.eu

[Contact us](#)

[Read the technical guide](#)

Ontology Mapping

<https://quality-link.eu/project-outputs/ontology-mapping/>

Project Output

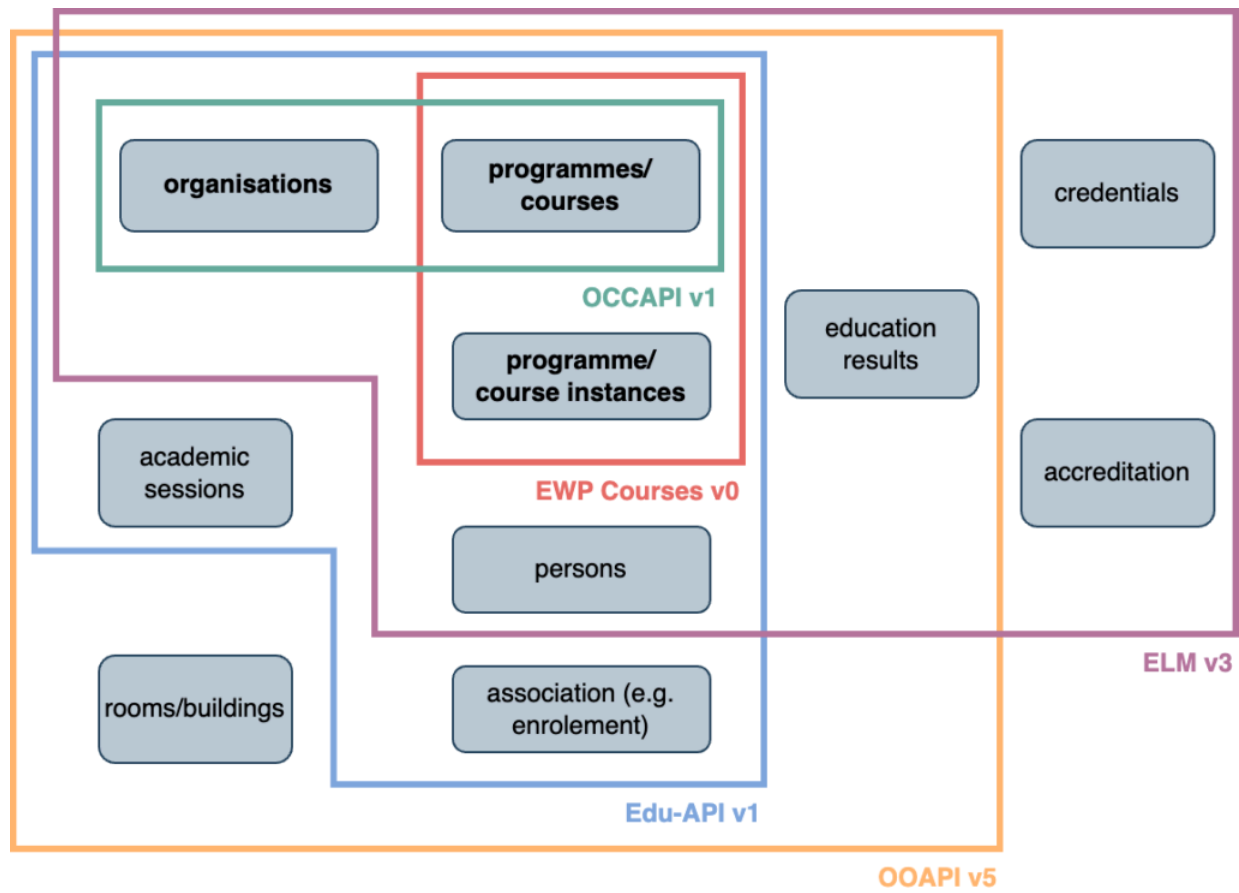
Oct 2024

Ontology Mapping

Over the past months, the QualityLink consortium has been working on a technical architecture for exchanging data on courses and micro-credentials. A standardised ontology will be at the heart of the proposed architecture. It will ensure semantic interoperability and serve as a “backbone” when aggregating and matching data from different sources.

The ontology will need to cover basic course data as well as the [quality indicators](#) to be addressed within the project. The project consortium looked into numerous existing data models and API specifications that standardise basic course data or quality in different ways. The following illustration and table provide an overview of the different domains covered by

those:



Name	Description	Maintained by	Technical approach
European Learning Model (ELM)	Used in the context of the European Digital Credentials for Learning (EDC) or the Qualification Dataset Register (QDR).	European Commission, DG Employment	RDF ontology and application profiles
ELMO	Based on the CEN standard EN 15981-2011 EuroLMAI and used in Emrex.	Emrex	XML schema
EWP Courses API	Used in the Erasmus Without Papers network.	EWP consortium	XML schema
Open Course Catalogue API (OCCAPI)	Inspired by the EWP APIs.	EUFP	REST API + JSON schema
Open Education API (OOAPI)	Specification developed by Dutch HEIs and used in some European University alliances; some overlap/similarity to Edu-API, but covers additional domains.	SURF & Community	REST API + JSON schema
Edu-API	Candidate specification inspired by different existing 1EdTech standards.	1EdTech	REST API + JSON schema
Database of External Quality Assurance Results (DEQAR)	Aggregates standardised information on quality assurance results from European QA agencies.	EQAR	REST API + JSON schema
European Higher Education Sector Observatory (EHESO, previously ETER) & OrgReg	Maintains basic institutional descriptors and aggregates statistical data on HEIs from national sources.	EHESO consortium on behalf of European Commission	REST API + JSON schema
Credential Transparency Description Language (CTDL)	Developed by a US-based think tank and used for its Credential Registry.	Credential Engine	RDF ontology

A detailed comparison how basic data and indicators are modelled by the most relevant existing standards is available in a [separate spreadsheet](#). As part of the QualityLink work programme we will be proposing ontologies for those indicators that are not yet modelled by any existing standard.

Overview: basic data and indicators described by existing ontologies																				
QualityLink	Micro-credentials CR	ECTS Users' Guide 2015	ELM v3	C	I	O	AAPI v5	C	I	Edu-API	C	I	EWP Courses	C	I	OCCAPI	C	I	DEQAR	C
4 Basic data			LearningOpportunity/LearningAchievement/Program/Offering				CourseTemplate/Offering			LearningOpportunity/SpecializedCourse									Programme	
5 Identifier	code	code	identifier	x	x	primaryCode / abbreviation	x	x	primaryCode	x	los-code	x	code	x	local_identifier	x				
6 Title of the course/micro-credential/programme	Title of the micro-credential	title	dc:title	x	x	name	x	x	title	x	title	x	title	x	name	x				
7 Education provider	Awarding body, Country/Region name, address	providedBy	organization	x		organization	x		organization	x	unit-id	x	hei	x	Institution	x				
8 Name of the qualification/credential	qualification awarded	learningAchievementSpecific	qualificationAwarded	x		levelOfQualification	x								qualification	x				
9 Level	Level (and cycle, if applicable) level of qualification according to field(s) of study (e.g. ISCED-F)	learningAchievementSpecific	levelOfQualification	x		level	x		level	x	eqLevelProvided	x	eqLevelProvided (F)	x	qf_hea_level	x				
10 Field of study	field(s) of study (e.g. ISCED-F)	learningAchievementSpecific	fieldsOfStudy	x		fieldsOfStudy	x				iscedCode	x	iscedCode	x	field_study	x				
11 Learning outcomes	Learning outcomes	learningAchievementSpecific	learningOutcomes	x		learningOutcomes	x		learningOutcomes	x	learningOutcomes	x	learningOutcomes	x	learning_outcomes	x				
12 Prerequisites and admission requirements	Prerequisites needed to enrol specific admission requirements	learningAchievementSpecific	requirements	x		requirements	x		requirements	x	prerequisites, prereq	x	prerequisites, prereq	x						
13 Evaluation and assessment methods	Type of assessment	assessment methods and criteria	learningAchievementSpecific	x		assessment	x				assessmentMethod	x	assessmentMethod	x	assessment_certificate	x				
14 Type	type	type	programType	x	x	programType	x		courseType	x	type	x	type	x	programme_type	x				
15 Credit points (ECTS)	Notional workload needed to	number of credits	learningAchievementSpecific	x		studyLoad	x		credit	x	credits	x	credits	x	workload_ects	x				
16 Nominal length	length of programme	dc:temporal / learningActivitySpecific	duration	x		duration	x		start/end/engagement	x	start/end/engagement	x	start/end/engagement	x						
17 Description	course content	dc:description	description	x		description	x		description	x	description	x	description	x						
18 Schedule	mode of study (full-time/part-time)	learningSchedule	modeOfStudy (program)	x		modeOfStudy (program)	x		paceOfStudy	x	academicTerm	x	academicTerm	x						
19 Grading scale	grading scale	learningAchievementSpecific	resultValue	x		resultValue	x		gradingScheme	x	gradingScheme	x	gradingScheme	x						
20 Language	language of instruction	learningActivitySpecification > dc:language	teachingLanguage	x		teachingLanguage	x	x	teachingLanguage	x	languageOfInstruction	x	languageOfInstruction	x	languageOfInstruction	x				
21 Evaluation and assessment ID verification	Supervision and identity verification	idVerification	idVerification	x		idVerification	x		idVerification	x	idVerification	x	idVerification	x						
22 Mode of learning (in-person/online/blended)	Form of participation in the learning process	learningActivitySpecification > dc:modeOfDelivery	modeOfDelivery	x		modeOfDelivery	x		offeringFormat	x	teachingMethod	x	teachingMethod	x						
23 1. Content Relevance, Labour Market Demand and Accuracy			(see above)	x		(see above)					(see above)	x	(see above)	x						
24 Accurate and up-to-date information (ESCO learning outcomes)																				
25 Demand for skills in micro-credentials																				
26 Specific requests for skills / micro-credentials																				
27 Stackability	Integration/stackability option:	hasPart / isPartOf	accreditation (Qualification only)	x		accreditation (Qualification only)														
28 Additional QA / Labels			accreditation (Qualification only)	x		accreditation (Qualification only)														
29 Quality Assurance (ESG)	Type of quality assurance use		accreditation (Qualification only)	x		accreditation (Qualification only)														
30 2. Teaching Methods and Pedagogy			accreditation (Qualification only)	x		learningActivitySpecification > modeOfDelivery	x													
31 Platform QA			learningActivitySpecification > modeOfDelivery	x		learningActivitySpecification > modeOfDelivery	x													
32 Active learning methodologies used			learningAchievementSpecific	x		learningAchievementSpecific	x													
33 Availability of tutoring or mentoring																				
34 Student/staff ratio																				
35 Assessment methods used																				
36 Virtual learning environment																				
37 3. Accessibility and Inclusivity																				
38 Make-up/diversity of the student body																				
39 Recognition of prior learning	specific arrangements for recognition of prior learning																			
40 Learner support services																				
41 Eligibility for grants / loans																				
42 4. Learner-Centred Approach, Satisfaction and Success																				
43 Student ratings																				
44 Graduation rate																				
45 Student ratings of educators																				
46 Student/graduate performance																				
47 Grade distribution			resultDistribution	x		resultDistribution	x		resultDistribution	x	resultDistribution	x	resultDistribution	x						
48 5. Institutional Reputation																				
49 Expertise of lecturers																				
50 Ranking																				
51 Networks																				
52 Recognition history (direct)			(in progress)			(in progress)														
53 Recognition history (skills)																				
54																				
55 Not included (too detailed or specific to local programme, only for individual credentials, ...)	local programme, only for individual credentials, ...)																			
56 Identification of the learner	type (compulsory/optional)																			
57 Date of issuing	year of study when the component is delivered (if applicable)																			
58 Grade achieved	semester/trimester when the component is delivered																			
59	recommended or required reading and other learning resources/tools																			
60	planned learning activities and teaching methods																			

Overview: basic data and indicators described by existing ontologies																				
QualityLink	Micro-credentials CR	ECTS Users' Guide 2015	ELM v3	C	I	OAAPI v5	C	I	Edu-API	C	I	EWP Courses	C	I	OCCAPI	C	I	DEQAR	C	I
Basic data			LearningOpportunity/LearningAchievement/Program/Offering			CourseTemplate/Offering			LearningOpportunity/SpecializedCourse									Programme		
Identifier	code	code	identifier	x	x	primaryCode / abbreviation	x	x	primaryCode	x	los-code	x	code	x	local_identifier	x				
Title of the course/micro-credential/programme	Title of the micro-credential	title	dc:title	x	x	name	x	x	title	x	title	x	title	x	name	x				
Education provider	Awarding body, Country/Region name, address	providedBy	organization	x		organization	x		organization	x	unit-id	x	hei	x	Institution	x				
Name of the qualification/credential	qualification awarded	learningAchievementSpecific	qualificationAwarded	x		levelOfQualification	x		level	x	eqLevelProvided	x	eqLevelProvided (F)	x	qualification	x				
Level	Level (and cycle, if applicable) level of qualification according to field(s) of study (e.g. ISCED-F)	learningAchievementSpecific	levelOfQualification	x		level	x		level	x	eqLevelProvided	x	eqLevelProvided (F)	x	qf_hea_level	x				
Field of study	field(s) of study (e.g. ISCED-F)	learningAchievementSpecific	fieldsOfStudy	x		fieldsOfStudy	x		fieldsOfStudy	x	iscedCode	x	iscedCode	x	field_study	x				
Learning outcomes	Learning outcomes	learningAchievementSpecific	learningOutcomes	x		learningOutcomes	x		learningOutcomes	x	learningOutcomes	x	learningOutcomes	x	learning_outcomes	x				
Prerequisites and admission requirements	Prerequisites needed to enrol specific admission requirements	learningAchievementSpecific	requirements	x		requirements	x		requirements	x	prerequisites, prereq	x	prerequisites, prereq	x						
Evaluation and assessment methods	Type of assessment	assessment methods and criteria	learningAchievementSpecific	x		assessment	x		assessment	x	assessmentMethod	x	assessmentMethod	x	assessment_certificate	x				
Type	type	type	programType	x	x	programType	x		courseType	x	type	x	type	x	programme_type	x				
Credit points (ECTS)	Notional workload needed to	number of credits	learningAchievementSpecific	x		studyLoad	x		credit	x	credits	x	credits	x	workload_ects	x				
Nominal length	length of programme	dc:temporal / learningActivitySpecific	duration	x		duration	x		start/end/engagement	x	start/end/engagement	x	start/end/engagement	x						
Description	course content	dc:description	description	x		description	x		description	x	description	x	description	x						
Schedule	mode of study (full-time/part-time)	learningSchedule	modeOfStudy (program)	x		modeOfStudy (program)	x		paceOfStudy	x	academicTerm	x	academicTerm	x						
Grading scale	grading scale	learningAchievementSpecific	resultValueType	x		resultValueType	x		gradingScheme	x	gradingScheme	x	gradingScheme	x						
Language	language of instruction	learningActivitySpecification > dc:language	teachingLanguage	x		teachingLanguage	x		teachingLanguage	x	languageOfInstruction	x	languageOfInstruction	x						
Evaluation and assessment ID verification	Supervision and identity verification	idVerification	idVerification	x		idVerification	x		idVerification	x	idVerification	x	idVerification	x						
Mode of learning (in-person/online/blended)	Form of participation in the learning process	learningActivitySpecification > dc:modeOfDelivery	modeOfDelivery	x		modeOfDelivery	x		offeringFormat	x	teachingMethod	x	teachingMethod	x						

QualityLink Data Sources and Access Policy

<https://specs.quality-link.eu/policy.html> !

QualityLink Data Sources and Access Policy Living Document, 28 November 2025

Issue Tracking:

[GitHub](#)

Editor:

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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 policy underpins the QualityLink technical specifications and describes on which data sources the QualityLink aggregator draws. It further sets out how the aggregated dataset may be accessed and used.

1. Introduction

1.1. Status of This Document

This document sets out key policies followed in the [QualityLink](#) project. These policies are first and foremost applicable for the lifetime of the project, which includes the testing and piloting of data aggregation and the publication of aggregated data. Any organisation possibly taking up Europe-wide data aggregation on micro-credentials and courses on a permanent basis might develop a different policy.

1.2. Goals and Rationale

The main focus of the QualityLink project is to design a technical architecture and propose technical specifications. Policies on key issues, however, influence some architectural choices and thus need to be defined beforehand to ensure that the architecture aligns with these policies.

Since the QualityLink will not only propose specifications, but also pilot aggregation, there is a need for a clear policy on data sources that are considered.

Furthermore, a policy on data use and sharing needs to clarify for education providers and other data sources how their aggregated data will be available to the public and can be used.

1.3. Audience

This policy primarily targets [higher education institutions](#) and the QualityLink project consortium itself.

In addition, it targets other data providers that have an interest to feed data into the QualityLink aggregator.

1.4. Changes Since the Previous Draft

n/a

2. Key Concepts

The following key concepts and terminology are used throughout the document, as well as other QualityLink specifications:

learning opportunity

an opportunity to realise a given set of learning outcomes through a learning activity or assessment [\[ELM\]](#). Offered by a [higher education institution](#) or [other provider](#). A learning opportunity can be part of a larger one and contain smaller ones. Specific learning opportunities are [courses](#), [modules](#) and [programmes](#).

learning opportunity specification

the general specification of a [learning opportunity](#), i.e. including the learning outcomes and credits. It is usually permanent and does not change from year to year or semester to semester.

learning opportunity instance

the specific offering of a [learning opportunity](#) in a specific academic term (e.g. year or semester) and specific setting (e.g. online vs face-to-face, different locations, ...). A single [learning opportunity specification](#) will usually be offered in many instances over time.

course

smallest learning opportunity that awards credits (i.e. ECTS) to the learner, either in the context of a study programme or as a self-standing offer. A course can be part of a [module](#) or [programme](#).

module

a [learning opportunity](#) that is a group or collection of [courses](#). A module may be part of a [programme](#).

micro-credential

a proof of the learning outcomes that a learner has acquired following a short learning experience. These learning outcomes have been assessed against transparent standards. [\[CR-MC\]](#)

programme

collection of [learning opportunities](#). Finalising a study programme usually leads to a degree (e.g. Bachelor degree, Master degree, etc.) or to another type of certificate, e.g. a [micro-credential](#), for a shorter programme. A programme is a "top-level" [learning opportunity](#) and has no parent.

joint programme

an integrated curriculum coordinated and offered jointly by different [higher education institutions](#), and leading to double/multiple degrees or a joint degree. [\[DEQAR\]](#)

education provider

any actor that provides degree programmes, micro-credentials or other [learning opportunities](#). This may include [higher education institutions](#) as well as [other providers](#), including employers, companies, social partners, NGOs, public authorities and others. [\[DEQAR\]](#)

higher education institution

an entity that has full degree awarding powers at higher education level (i.e. EQF levels 5 to 8; QF-EHEA cycle first to third) recognised by at least one national authority. [\[DEQAR\]](#)

other provider

an entity that provides learning opportunities, but that does not have officially-recognised authority to award degrees or other formally recognised qualifications.

data provider

an entity providing data on [learning opportunities](#). This can be an [education provider](#) providing data on its own learning opportunities or another organisation providing data on various [education providers](#).

aggregator

any service that harvests data from different [data providers](#), matches and compiles the data into one single dataset. For example, the aggregator service developed within the QualityLink project.

QualityLink dataset

the dataset created within the scope of the current project, made publicly available through a prototype platform

QualityLink aggregator

the specific [aggregator](#) developed and deployed within the the QualityLink project, aggregating data from various [data providers](#) into the [QualityLink dataset](#)

user

any person or organisations accessing the [QualityLink dataset](#)

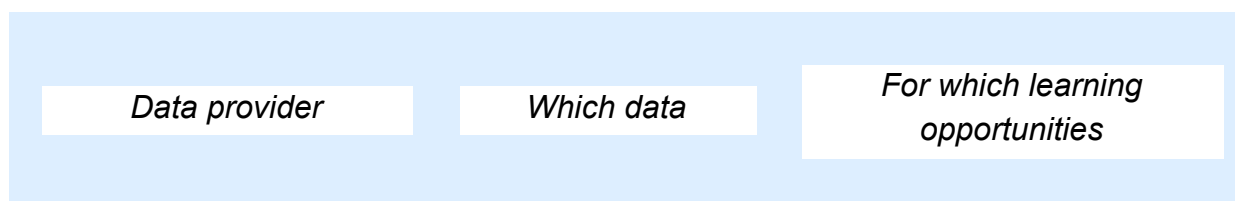
3. Objectives

This policy has the following objectives, formulated as user stories:

1. As a [user](#) I want to be assured that aggregated data in the [QualityLink dataset](#) is trustworthy and does not include flawed or rogue data.
2. As a [higher education institution](#) I want to explore my course data for aggregation by the [QualityLink aggregator](#) without the need for endorsement or clearance by any other organisation.
3. As a [data provider](#) I want clarity which data can be aggregated into the [QualityLink dataset](#).
4. As a [data provider](#) I want to have clarity on how my data will be published and might be used by [users](#).
5. As an advanced [user](#) (e.g. researcher) I want to access the [QualityLink dataset](#) under clear terms and conditions, in order to have legal certainty when copying, re-using or embedding QualityLink data in my own applications.

4. Data sources

For the purpose of QualityLink, we distinguish between three classes of [data providers](#):



authoritative source	any	any providers'
education provider	any	only own
third party	specific indicators	any

4.1. Authoritative sources

These organisations may provide trusted data on any [education provider](#) and their [learning opportunities](#).

Currently, the following sources are considered authoritative:

- Database of External Quality Assurance Results [\[DEQAR\]](#)
- European Higher Education Sector Observatory [\[EHESO\]](#) (formerly ETER)

In general, official national authorities, e.g. a database operated by the ministry of education, can be considered authoritative in addition.

Additional sources can be approved by the QualityLink consortium as authoritative, based on an ad-hoc assessment.

4.2. Education providers

[higher education institutions](#) and [other providers](#) may provide trusted data on their own [learning opportunities](#). In principle, any *bona fide* organisation can provide data.

All organisations listed in [\[DEQAR\]](#), the Register of Public Sector Organisations [\[ORGREG\]](#) or holding an Erasmus Charter [\[ECHE\]](#) are considered officially recognised [higher education institutions](#). The technical specification ensure that these can decide to publish data and have it harvested by the [QualityLink aggregator](#) without the need for manual intervention from the QualityLink consortium/admins or anyone else.

For [other providers](#), automatic management/discovery is not feasible at the moment. These will be considered by the QualityLink consortium on an ad-hoc basis.

4.3. Third party

Other third parties may provide data on existing [learning opportunities](#) of any [education provider](#), but limited to specific domains.

Any organisation can propose that its data be harvested by the [QualityLink aggregator](#). The QualityLink consortium will only consider eligible data providers that:

- provide data on [learning opportunities](#) in several countries/education systems, or data on a large number of [learning opportunities](#) in one system,
- provide data that is relevant to the QualityLink [Quality Domains and Indicators](#),
- ensure transparency of their methodology and how their data/indicators are collected, and
- do not present data in a biased way to favour specific [education providers](#) and their [learning opportunities](#).

Currently, the [QualityLink dataset](#) includes data from the following third-party sources:

- abc
- def

Note: list to add if we start using third-party sources.

5. Data access and usage

5.1. License

The [QualityLink dataset](#) is made available under Creative Commons Attribution-NonCommercial 4.0 International [\[CC-BY-NC\]](#).

This license requires that [users](#) give credit to the QualityLink consortium. It allows [users](#) to distribute, remix, adapt and build upon the material in any medium or format, but for noncommercial purposes only.

5.2. API usage

The QualityLink API is available for public use. Anonymous access to the API may be subject to rate limits, which will be mentioned in the documentation.

The QualityLink consortium may grant authenticated access to non-commercial registered users (e.g. researchers, non-commercial platforms) with higher or no rate limits.

Conformance

Conformance requirements are expressed with a combination of descriptive assertions and RFC 2119 terminology. The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in the normative parts of this document are to be interpreted as described in RFC 2119. However, for readability, these words do not appear in all uppercase letters in this specification.

All of the text of this specification is normative except sections explicitly marked as non-normative, examples, and notes. [\[RFC2119\]](#)

Examples in this specification are introduced with the words “for example” or are set apart from the normative text with `class="example"`, like this:

This is an example of an informative example.

Informative notes begin with the word “Note” and are set apart from the normative text with `class="note"`, like this:

Note, this is an informative note.

Index

Terms defined by this specification

- [aggregator](#), in § 2
- [course](#), in § 2
- [data provider](#), in § 2
- [education provider](#), in § 2
- [higher education institution](#), in § 2
- [joint programme](#), in § 2
- [learning opportunity](#), in § 2
- [learning opportunity instance](#), in § 2
- [learning opportunity specification](#), in § 2
- [micro-credential](#), in § 2

[module](#), in § 2
[other provider](#), in § 2
[programme](#), in § 2
[QualityLink aggregator](#), in § 2
[QualityLink dataset](#), in § 2
[user](#), in § 2

References

Normative References

[CC-BY-NC]

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[DEQAR]

European Quality Assurance Register (EQAR). [DEQAR Documentation](https://docs.deqar.eu/stable/). v1.2. URL: <https://docs.deqar.eu/stable/>

[ECHE]

European Commission. [Erasmus Charter for Higher Education](https://erasmus-plus.ec.europa.eu/document/higher-education-institutions-holding-an-eche-2021-2027). URL: <https://erasmus-plus.ec.europa.eu/document/higher-education-institutions-holding-an-eche-2021-2027>

[EHESO]

European Commission. [European Higher Education Sector Observatory](https://national-policies.eacea.ec.europa.eu/eheso/micro-data-access). Microdata on higher education institution. URL: <https://national-policies.eacea.ec.europa.eu/eheso/micro-data-access>

[ORGREG]

RISIS. [Register of Public Sector Organisations](https://www.risis2.eu/registers-orgreg/). URL: <https://www.risis2.eu/registers-orgreg/>

[RFC2119]

S. Bradner. [Key words for use in RFCs to Indicate Requirement Levels](https://datatracker.ietf.org/doc/html/rfc2119). March 1997. Best Current Practice. URL: <https://datatracker.ietf.org/doc/html/rfc2119>

Non-Normative References

[CR-MC]

European Union. [Council Recommendation on a European approach to micro-credentials for lifelong learning and employability](#). 16 June 2022. 2022/C 243/02. URL:
[https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022H0627\(02\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022H0627(02))

[ELM]

European Commission. [European Learning Model \(ELM\)](#). v3. URL:
<https://europa.eu/europass/elm-browser/index.html>

QualityLink Ontology and Application Profile

<https://specs.quality-link.eu/resources/ontology.html>

QualityLink Ontology and Application Profile

Release: 2025-02-13

Modified on: 2026-05-31

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1.3.0

Issued on:

2025-02-13

Publisher:

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

Imported Ontologies:

[ontology](#)

[22-rdf-syntax-ns#](#)

[core](#)

[regorg](#)

[<http://xmlns.com/foaf/0.1/>](http://xmlns.com/foaf/0.1/)

Download serialization:

Format **JSON LD**

Format **RDF/XML**

Format **N Triples**

Format **TTL**

License:

License <https://creativecommons.org/licenses/by/4.0/>

Cite as:

QualityLink Ontology and Application Profile. Revision: 1.3.0.

Vocabulary maintained at:

<https://github.com/Knowledge-Innovation-Centre/quality-link-specs>

Abstract

The QualityLink ontology and application profile build on the European Learning Model (ELM). They defines additional classes and properties to describe things not currently covered in ELM.

Table of contents

- 1. [Introduction](#)
- 2. [QualityLink: Overview](#)
- 3. [QualityLink: Description](#)
- 4. [Cross-reference for QualityLink classes, object properties and data properties](#)
 - 4.1. [Classes](#)
 - 4.2. [Object Properties](#)
 - 4.3. [Data Properties](#)
 - 4.4. [Named Individuals](#)
- 5. [References](#)
- 6. [Acknowledgments](#)

Introduction

back to [ToC](#)

This ontology and application profile were developed as part of the QualityLink Erasmus+ project.

QualityLink: Overview

back to [ToC](#)

This ontology has the following classes and properties.

Classes

[European University Alliance](#)
[kaymak](#)

Object Properties

[absorbed](#)
[includes students of](#)
[is member of](#)
[learner group](#)
[minimum EQF Level](#)
[organisation](#)
[reference group](#)
[related to](#)
[required learning opportunity for entry](#)
[required learning outcome for entry](#)
[specific conditions for learner group](#)
[specific learning opportunity](#)
[spun off from](#)
[succeeded](#)
[superseded](#)
[superseded by](#)
[thematic area \(broad field\)](#)
[thematic area \(narrow field\)](#)
[virtual learning environment](#)

Data Properties

[enrolled learner count](#)
[enrolment capacity](#)
[ingested at](#)
[ingested on](#)
[instance count](#)
[is active](#)
[minimum enrolment](#)
[open to non-enrolled learners](#)
[order](#)
[passing rate](#)
[percentage](#)
[ratio](#)
[reference year](#)
[registration portal](#)
[version](#)

Named Individuals

- [European University Alliance](#)
- [Grade](#)
- [Grade Distribution](#)
- [Grading Scheme](#)
- [Group of Higher Education Institutions](#)
- [Higher Education Institution](#)
- [Identifier](#)
- [Learner Group](#)
- [Learner Group Conditions](#)
- [Learning Opportunity Instance](#)
- [Learning Opportunity Instance Reference](#)
- [Learning Opportunity Specification](#)
- [Learning Opportunity Specification Reference](#)
- [Learning Outcome](#)
- [OrgReg \(identifier scheme\)](#)
- [OrgReg ID](#)
- [SCHAC \(identifier scheme\)](#)
- [SCHAC Code](#)
- [Student-staff ratio](#)
- [URL](#)

QualityLink: Description

back to [ToC](#)

The QualityLink ontology extends the European Learning Model (ELM) ontology by additional classes and properties required in the context of the QualityLink project.

The additional classes and properties describe things not currently covered in ELM, including certain quality indicators with relevance for the project.

QualityLink further defines an application profile defined as SHACL constraints, which are based on the ELM Learning Opportunities and Qualifications (LOQ) application profile. The application profile is used by the QualityLink pilot aggregator. The QualityLink profile only adds optional properties to the ELM profile, no required ones.

The QualityLink ontology and profile were originally developed based on ELM 3.2 and ELM 3.3.1 (LOQ profile v1.3.0).

The profile references the [ELM controlled vocabularies](#) published by the EU.

Cross-reference for QualityLink classes, object properties and data properties

[back to ToC](#)

This section provides details for each class and property defined by QualityLink.

Classes

[European University Alliance](#)
[kaymak](#)

European University Alliance^c

[back to ToC](#) or [Class ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#EuropeanUniversityAlliance>

has super-classes

[Group of Higher Education Institutions](#)^c

is also defined as

[named individual](#)

[kaymak](#)^c

[back to ToC](#) or [Class ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#Kajmak>

Kaymak is a creamy dairy food similar to clotted cream, made from the milk of water buffalo, cows, sheep, or goats in Central Asia, some Balkan countries, some Caucasus countries, the Levant, Turkic regions, Iran and Iraq.

Source

<https://en.wikipedia.org/wiki/Kaymak>

has super-classes

[F O O D O N 00001256](#) ^c

Object Properties

[absorbed](#)
[includes students of](#)
[is member of](#)
[learner group](#)
[minimum EQF Level](#)
[organisation](#)
[reference group](#)
[related to](#)
[required learning opportunity for entry](#)
[required learning outcome for entry](#)
[specific conditions for learner group](#)
[specific learning opportunity](#)
[spun off from](#)
[succeeded](#)
[superseded](#)
[superseded by](#)
[thematic area \(broad field\)](#)
[thematic area \(narrow field\)](#)
[virtual learning environment](#)

[absorbed](#)^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#absorbed>

Organisation absorbed another one (i.e. subject existed before and after the event, object ceased to exist)

has super-properties

[related to](#) ^{op}

has domain

[Organisation](#) ^c

[includes students of](#)^{fop}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#studentsOf>

Defines that the target group of learners includes the students of an education institution, or an alliance thereof

has domain

[Learner Group](#)^c

is member of^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#isMemberOf>

Specifies that an organisation is member of an alliance, e.g. a European Universities alliance, a consortium, or an association, e.g. EUA or EURASHE.

is inverse of

[member](#)^{op}

learner group^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#learnerGroup>

Definition of the specific group of learners to whom these conditions apply

has domain

[Learning Opportunity Instance](#)^c

has range

[Learner Group](#)^c

minimum EQF Level^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#minimumEQFLevel>

Defines that the learning opportunity is offered to students enrolled in another learning opportunity at a specified EQF level or higher. If provided, the value must come from

the EU controlled vocabulary
<http://publications.europa.eu/resource/dataset/european-qualification-framework>

has domain

[Learner Group](#) ^c

organisation^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#aboutOrganisation>

Education provider the indicator describes.

has range

[Higher Education Institution](#) ^c

reference group^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#referenceGroup>

The group of learners for which the histogram of results was established.

has domain

[Result Distribution](#) ^c

has range

[Learner Group](#) ^c

related to^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#relatedTo>

A relationship between Learning Opportunities or Organisations (abstract)

has characteristics: asymmetric

has sub-properties

[absorbed](#)^{op}, [spun off from](#)^{op}, [succeeded](#)^{op}, [superseded](#)^{op}, [superseded by](#)^{op}

required learning opportunity for entry^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#entryRequirementLearningOpportunity>

Specific entry requirement or prerequisite to have completed another learning opportunity.

has range

[Learning Opportunity Specification Reference](#)^c

required learning outcome for entry^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#entryRequirementLearningOutcome>

Specific entry requirement or prerequisite to have achieved a particular learning outcome.

has range

[Learning Outcome](#)^c

specific conditions for learner group^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#learnerGroupConditions>

Indicates specific conditions that apply to a certain target group of learners

has domain

[Learning Opportunity Instance](#)^c

has range

[Learner Group Conditions](#)^c

specific learning opportunity^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#limitLearningOpportunity>

Defines that the learning opportunity is offered to students enrolled in a specified other learning opportunity.

has domain

[Learner Group](#) ^c

spun off from^{op}

[back to ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#spunOffFrom>

Organisation spun off from another one (i.e. subject newly created by the event, object existed before and after)

has super-properties

[related to](#) ^{op}

has domain

[Organisation](#) ^c

succeeded^{op}

[back to ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#succeeded>

Organisation succeeded/replaced another one (i.e. subject was newly created by the event, object ceased to exist)

has super-properties

[related to](#) ^{op}

has domain

[Organisation](#) ^c

superseded^{op}

[back to ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#superseded>

Learning Opportunity specification superseded another one, which is no longer (or temporarily not) offered.

has super-properties

[related to](#) ^{op}

has domain

[Learning Opportunity Specification](#) ^c

is inverse of

[superseded by](#) ^{op}

[superseded by](#) ^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#supersededBy>

Learning Opportunity specification was superseded by another one. This normally means that the subject learning opportunity is no longer offered.

has super-properties

[related to](#) ^{op}

has domain

[Learning Opportunity Specification](#) ^c

is inverse of

[superseded](#) ^{op}

[thematic area \(broad field\)](#) ^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#ISCEDFBroadField>

ISCED-F 2013 field, truncated to 2-digit broad field

[thematic area \(narrow field\)](#) ^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#ISCEDFNarrowField>

ISCED-F 2013 field, truncated to 3-digit narrow field

virtual learning environment^{op}

back to [ToC](#) or [Object Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#virtualLearningEnvironment>

Specifies (a) virtual learning environment(s) used in the delivery of this learning opportunity.

has domain

[Learning Opportunity Instance](#)^c

Data Properties

[enrolled learner count](#)
[enrolment capacity](#)
[ingested at](#)
[ingested on](#)
[instance count](#)
[is active](#)
[minimum enrolment](#)
[open to non-enrolled learners](#)
[order](#)
[passing rate](#)
[percentage](#)
[ratio](#)
[reference year](#)
[registration portal](#)
[version](#)

enrolled learner count^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#enrolledLearnerCount>

The number of learners that are currently enrolled for the Learning Opportunity Instance.

has range

[non Negative Integer](#)

enrolment capacity^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#enrolmentCapacity>

The number of learners that can register for a Learning Opportunity Instance.

has range

[non Negative Integer](#)

ingested at^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#ingestedAt>

The time data on this learning opportunity was last updated in the aggregator.

has range

[date Time](#)

ingested on^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#ingestedDate>

The date when this learning opportunity was last updated in the aggregator.

has range

[date](#)

instance count^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#instanceCount>

Number of Learning Opportunity Instances recorded for this Learning Opportunity Specification.

has range

[non Negative Integer](#)

is active^{dp}

[back to ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#isActive>

Learning Opportunity Specification is active, i.e. instances are currently offered or the education provider expects that instances will still be offered in the future.

has range

[boolean](#)

minimum enrolment^{dp}

[back to ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#enrolmentMinimum>

The number of learners that at least need to enrol for a Learning Opportunity Instance to take place.

has range

[non Negative Integer](#)

open to non-enrolled learners^{dp}

[back to ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#isOpenToNonEnrolled>

Indicates that a learning opportunity is also open to learners not currently enrolled as regular students.

has range

[boolean](#)

[order](#)^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#gradeOrder>

A number specifying the order of the grade within the grading scheme, the highest number indicating the best grade.

has range

[positive Integer](#)

[passing rate](#)^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#passingRate>

The percentage of learners who pass on average.

has range

[positive Integer](#)

[percentage](#)^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#gradePercentage>

The percentage of learners earning this grade.

has range

[positive Integer](#)

[ratio](#)^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#ratioValue>

The student-staff ratio for this institution/ISCED-F field/course.

has range

[double](#)

reference year^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#referenceYear>

The reference year to which this statistical indicator relates.

has range

[g Year](#)

registration portal^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#registrationPortal>

A web page at which one can register or enrol for a Learning Opportunity.

has range

[any U R I](#)

version^{dp}

back to [ToC](#) or [Data Property ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#version>

A number or other identifier that indicates the version of the Learning Opportunity specification.

has range

[string](#)

Named Individuals

[European University Alliance](#)

[Grade](#)

[Grade Distribution](#)

[Grading Scheme](#)
[Group of Higher Education Institutions](#)
[Higher Education Institution](#)
[Identifier](#)
[Learner Group](#)
[Learner Group Conditions](#)
[Learning Opportunity Instance](#)
[Learning Opportunity Instance Reference](#)
[Learning Opportunity Specification](#)
[Learning Opportunity Specification Reference](#)
[Learning Outcome](#)
[OrgReg \(identifier scheme\)](#)
[OrgReg ID](#)
[SCHAC \(identifier scheme\)](#)
[SCHAC Code](#)
[Student-staff ratio](#)
[URL](#)

European University Allianceⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#EuropeanUniversityAlliance>

belongs to

[Node Shape](#)^c

is also defined as

[class](#)

Gradeⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#GradeShape>

Description of a single grade within a histogram of results.

belongs to

[Node Shape](#)^c

has facts

[order](#) ^{ap} "44"^^[integer](#)

[property](#) ^{ap} ""

[property](#) ^{ap} ""

[property](#) ^{ap} ""

[target Class](#) ^{ap} [Result Category](#) ^{ep}

[main](#) ^{ap} "false"^^[boolean](#)

[Grade Distribution](#) ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#GradeDistributionShape>

It describes a histogram of grades achieved by learners within a specific reference group.

belongs to

[Node Shape](#) ^c

has facts

[order](#) ^{ap} "42"^^[integer](#)

[property](#) ^{ap} ""

[property](#) ^{ap} ""

[target Class](#) ^{ap} [Result Distribution](#) ^c

[main](#) ^{ap} "false"^^[boolean](#)

[Grading Scheme](#) ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#GradingSchemeSchape>

Information on the grading scheme used.

belongs to

[Node Shape](#) ^c

has facts

[order](#) ^{ap} "40"^^[integer](#)

[property](#) ^{ap} ""

[property](#) ^{ap} ""

[property](#) ^{ap} ""

[property](#) ^{ap} ""

[property](#) ^{ap} ""

[target Class](#) ^{ap} [Grading Scheme](#) ^{ep}

[main](#) ^{ap} "false"^^[boolean](#)

[Group of Higher Education Institutions](#) ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#GroupOfHEIs>

belongs to

[Node Shape](#) ^c

is also defined as

class

[Higher Education Institution](#) ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#HigherEducationInstitution>

belongs to

[Node Shape](#) ^c

is also defined as

class

[Identifier](#) ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#Identifier>

A character string that identifies a course or another unique object.

belongs to

[Node Shape](#)^c

has facts

[order](#)^{ap} *"70"^^integer*

[property](#)^{ap} [Identifier adms scheme Agency](#)^{ep}

[property](#)^{ap} [Identifier dc creator](#)^{ep}

[property](#)^{ap} [Identifier dc issued](#)^{ep}

[property](#)^{ap} [Identifier elm scheme Id](#)^{ep}

[property](#)^{ap} [Identifier elm scheme Name](#)^{ep}

[property](#)^{ap} [Identifier elm scheme Version](#)^{ep}

[property](#)^{ap} [Identifier skos notation](#)^{ep}

[target Class](#)^{ap} [Identifier](#)^{ep}

[main](#)^{ap} *"false"^^boolean*

Learner Groupⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#LearnerGroup>

belongs to

[Node Shape](#)^c

is also defined as

class

Learner Group Conditionsⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#LearnerGroupConditions>

belongs to

[Node Shape](#)^c

is also defined as

class

[Learning Opportunity Instance](#)ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#LearningOpportunityInstance>

belongs to

[Node Shape](#)^c

is also defined as

class

[Learning Opportunity Instance Reference](#)ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#LearningOpportunityInstanceReference>

belongs to

[Node Shape](#)^c

is also defined as

class

[Learning Opportunity Specification](#)ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#LearningOpportunitySpecification>

belongs to

[Node Shape](#)^c

is also defined as

class

[Learning Opportunity Specification Reference](#)ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#LearningOpportunitySpecificationReference>

belongs to

[Node Shape](#)^c

is also defined as

class

[Learning Outcome](#)ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#LearningOutcome>

A statement regarding what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and responsibility and autonomy.

belongs to

[Node Shape](#)^c

has facts

[order](#) ^{ap} `"20"`^{^^}[integer](#)

[property](#) ^{ap} `""`

[property](#) ^{ap} `""`

[property](#) ^{ap} `""`

[property](#) ^{ap} `""`

[property](#) ^{ap} `""`

[property](#) ^{ap} `""`

[property](#) ^{ap} `""`

[target Class](#) ^{ap} [Learning Outcome](#)^c

[main](#) ^{ap} `"false"`^{^^}[boolean](#)

[OrgReg \(identifier scheme\)](#)ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#OrgReg>

The identifier scheme defined by the Register of Public Sector Organisations (OrgReg)

belongs to

[Concept Scheme](#) ^c

[OrgReg ID](#) ⁿⁱ

[back to ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#OrgRegIdentifier>

belongs to

[Node Shape](#) ^c

is also defined as

class

[SCHAC \(identifier scheme\)](#) ⁿⁱ

[back to ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#Schac>

The identifier scheme for higher education institutions defined by the Schema for Academia (SCHAC).

belongs to

[Concept Scheme](#) ^c

[SCHAC Code](#) ⁿⁱ

[back to ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#SchacIdentifier>

belongs to

[Node Shape](#) ^c

is also defined as

class

Student-staff ratioⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI: <http://data.quality-link.eu/ontology/v1#StudentStaffRatio>

belongs to

[Node Shape](#)^c

is also defined as

class

[URL](#)ⁿⁱ

back to [ToC](#) or [Named Individual ToC](#)

IRI:

<http://data.europa.eu/snb/model/application-profile/loq-constraints/URLRegexRestriction>

This shape does not apply on a class. This shape is for checking if the value of contentUrl is well formed.

Is defined by

<http://data.europa.eu/snb/model/application-profile/loq-constraints>

belongs to

[Node Shape](#)^c

has facts

[order](#)^{ap} ["80"^^integer](#)

[property](#)^{ap} [U R L Regex elm content Url](#)^{ep}

Legend

back to [ToC](#)

^c: Classes

^{op}: Object Properties

^{dp}: Data Properties

ⁿⁱ: Named Individuals

^{ep}: External Properties

References

back to [ToC](#)

Add your references here. It is recommended to have them as a list.

Acknowledgments

back to [ToC](#)

The authors would like to thank [Silvio Peroni](#) for developing [LODE](#), a Live OWL Documentation Environment, which is used for representing the Cross Referencing Section of this document and [Daniel Garijo](#) for developing [Widoco](#), the program used to create the template used in this documentation.

QualityLink Course Identifier Specification

https://specs.quality-link.eu/course_identifier.html

QualityLink Course Identifier Specification

Living Standard, 28 November 2025

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Project Website:

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

Project Reference:

Task 3.3 (Development of a Technical Standard for Unique Course Identification)

Alpha version (1.0.0-alpha)

This spec is an alpha version released by the QualityLink project. It is implemented by the QualityLink data aggregator and prototype platform, and can be used by higher education institutions for testing. Changes might be made resulting from the testing phase, but will be reflected in a version number following Semantic Versioning 2.0.0 conventions.



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Abstract

This specification standardises how individual courses can be consistently identified across different systems.

1. Introduction

1.1. Status of This Document

This document is a draft of this specification, drafted by KIC and EUF within the [QualityLink](#) project. It has been discussed with the QualityLink Standards Consultation Board.

1.2. Goals and Rationale

The unique course identifier should facilitate the identification and comparison of courses and allow for higher education courses to be tracked across multiple different systems and databases.

1.3. Audience

This specification is intended for use by higher education institutions and other data providers that would like their data to be available for aggregation.

Secondly, it targets data aggregators. The QualityLink project will implement a data aggregator to test and demonstrate this specification in practice.

1.4. Changes Since the Previous Draft

n/a

2. Key Concepts

The following key concepts and terminology are used throughout the document, as well as other QualityLink specifications:

learning opportunity

an opportunity to realise a given set of learning outcomes through a learning activity or assessment [\[ELM\]](#). Offered by a [higher education institution](#) or [other provider](#). A learning opportunity can be part of a larger one and contain smaller ones. Specific learning opportunities are [courses](#), [modules](#) and [programmes](#).

learning opportunity specification

the general specification of a [learning opportunity](#), i.e. including the learning outcomes and credits. It is usually permanent and does not change from year to year or semester to semester.

learning opportunity instance

the specific offering of a [learning opportunity](#) in a specific academic term (e.g. year or semester) and specific setting (e.g. online vs face-to-face, different locations, ...). A single [learning opportunity specification](#) will usually be offered in many instances over time.

course

smallest learning opportunity that awards credits (i.e. ECTS) to the learner, either in the context of a study programme or as a self-standing offer. A course can be part of a [module](#) or [programme](#).

module

a [learning opportunity](#) that is a group or collection of [courses](#). A module may be part of a [programme](#).

micro-credential

a proof of the learning outcomes that a learner has acquired following a short learning experience. These learning outcomes have been assessed against transparent standards. [\[CR-MC\]](#)

programme

collection of [learning opportunities](#). Finalising a study programme usually leads to a degree (e.g. Bachelor degree, Master degree, etc.) or to another type of certificate, e.g. a [micro-credential](#), for a shorter programme. A programme is a "top-level" [learning opportunity](#) and has no parent.

joint programme

an integrated curriculum coordinated and offered jointly by different [higher education institutions](#), and leading to double/multiple degrees or a joint degree. [\[DEQAR\]](#)

education provider

any actor that provides degree programmes, micro-credentials or other [learning opportunities](#). This may include [higher education institutions](#) as well as [other providers](#), including employers, companies, social partners, NGOs, public authorities and others. [\[DEQAR\]](#)

higher education institution

an entity that has full degree awarding powers at higher education level (i.e. EQF levels 5 to 8; QF-EHEA cycle first to third) recognised by at least one national authority. [\[DEQAR\]](#)

other provider

an entity that provides learning opportunities, but that does not have officially-recognised authority to award degrees or other formally recognised qualifications.

data provider

an entity providing data on [learning opportunities](#). This can be an [education provider](#) providing data on its own learning opportunities or another organisation providing data on various [education providers](#).

aggregator

any service that harvests data from different [data providers](#), matches and compiles the data into one single dataset. For example, the aggregator service developed within the QualityLink project.

3. User Stories

The following usage scenarios illustrate ways in which this specification might be used or desired features it should enable:

3.1. Issue course identifiers

As an education provider I want to publish and control authoritative identifiers for my courses.

3.2. Dereference course identifiers

As a user I want to dereference a course identifier to a standardised description of the course, incl. other identifiers assigned to the same course.

3.3. Retrieve historical data on courses

As a user I want to retrieve historical information (e.g. previous names and identifiers) or demographic information (e.g. course has been replaced by another course, course was discontinued, ...).

4. Requirements

The requirements for a Unique Course Identifier are two-fold:

- It is necessary to uniquely identify the [higher education institution](#) or [other provider](#) offering the [course](#);
- It is necessary to uniquely identify the [course](#) within the internal systems of the provider.

5. Identifying a provider

Identifying a [higher education institution](#) or [other provider](#) globally is challenging due to a lack of a single central authority issuing immutable identifiers for [education providers](#).

Several identifiers and registries exist covering [higher education institutions](#), such as ETER or OrgReg IDs used by [\[EHESO\]](#), DEQARINST identifiers used by [\[DEQAR\]](#), PIC and Erasmus Codes used in relation to [\[ECHE\]](#) and SCHAC codes used by [EWP](#) and [eduGAIN](#). [Other providers](#) are, however, not fully covered by these facilities.

In order to ensure broad coverage of all types of ET providers, each [education provider](#) must be identified by their SCHAC code, i.e. `schacHomeOrganization` [\[SCHAC\]](#). This is typically an entity's domain name, therefore controlled by the entity and registered with ICANN.

In line with the discovery mechanism specified in [\[QL-DISCO\]](#), an institution can additionally be identified by an ETER/OrgReg ID [\[EHESO\]](#) or a DEQARINST ID [\[DEQAR\]](#).

need to address changes of SCHAC codes?

6. Identifying a course

The present specification aims to uniquely identify [learning opportunity specifications](#), as this represents the more permanent set of attributes that should also commonly be used when comparing [courses](#) or [programmes](#) for the purpose of recognition or similar.

Note: information on [learning opportunity instances](#) can nevertheless also be exposed in a standardised format and aggregated, e.g. for the purpose of informing potential learners.

The present standard does not suggest any particular format for a [course](#) identifier, so long as it is unique within the internal systems of the [education provider](#).

For an identifier to be unique, it is not sufficient that it occurs only once within a given database. It must also not be reused for a different [course](#) once it has been issued.

6.1. Defining a different course

Since certain information about a [course](#) specification may change over time, it is necessary to define when such changes have an impact so significant that an updated course specification should be considered to describe a fundamentally different course.

As long as a course retains the same learning outcomes and workload / ECTS credits, it should be considered the same course and retain its unique identifier.

Once a course's learning outcomes change significantly (which is left at the discretion of the provider) or its ECTS credit count changes at all, it should be considered a different course, therefore listed separately from its previous version and assigned a new unique internal identifier.

Providers may use the property [ql:version](#) to signal other changes (i.e. such that do not lead to assigning a new unique identifier) in their data.

address mergers of institutions etc.

7. Format

7.1. Main: URN format

Unique Course Identifiers should be expressed in URN format [\[rfc8141\]](#), under the SCHAC namespace:

```
urn:schac:uniqueCourseId:domain.tld:ABCD1234
```

Where `domain.tld` is the SCHAC code of the [education provider](#) and `ABCD1234` is the unique internal identifier of the course.

Note: proposal to be made to REFEDS for [SCHAC URN Registry](#)

7.2. Complementary approach: DID

Some providers may want to use Decentralized Identifiers (DIDs) [\[did-core\]](#) as an approach to identify [learning opportunities](#).

For convenience, this specification recommends that [education providers](#) use the `did:web` method [\[did-extensions-methods\]](#) in this case and construct their DIDs as follows:

`did:web:domain.tld:courseId:ABCD1234`

Whereas `domain.tld` is the SCHAC code and `ABCD1234` the unique internal identifier as above. This has the convenience that the URN and DID notations can easily be converted to each other.

Conformance

Conformance requirements are expressed with a combination of descriptive assertions and RFC 2119 terminology. The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in the normative parts of this document are to be interpreted as described in RFC 2119. However, for readability, these words do not appear in all uppercase letters in this specification.

All of the text of this specification is normative except sections explicitly marked as non-normative, examples, and notes. [\[RFC2119\]](#)

Examples in this specification are introduced with the words “for example” or are set apart from the normative text with `class="example"`, like this:

This is an example of an informative example.

Informative notes begin with the word “Note” and are set apart from the normative text with `class="note"`, like this:

Note, this is an informative note.

Index

Terms defined by this specification

- [aggregator](#), in § 2
- [course](#), in § 2
- [data provider](#), in § 2
- [education provider](#), in § 2
- [higher education institution](#), in § 2
- [joint programme](#), in § 2
- [learning opportunity](#), in § 2
- [learning opportunity instance](#), in § 2
- [learning opportunity specification](#), in § 2

[micro-credential](#), in § 2

[module](#), in § 2

[other provider](#), in § 2

[programme](#), in § 2

References

Normative References

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European Quality Assurance Register (EQAR). [DEQAR Documentation](#). v1.2.
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Issues Index

QualityLink Data Source Discovery Specification

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

QualityLink Data Source Discovery Specification

Living Standard, 28 November 2025

Issue Tracking:

[GitHub](#)

Editor:

[Colin Tück](#) (Knowledge Innovation Centre; KIC) colin@knowledgeinnovation.eu

Project Website:

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

Project Reference:

Task 3.6 (Creation of a Technical Trusted List Standard)

Alpha version (1.0.0-alpha)

This spec is an alpha version released by the QualityLink project. It is implemented by the QualityLink data aggregator and prototype platform, and can be used by higher education institutions for testing. Changes might be made resulting from the testing phase, but will be reflected in a version number following Semantic Versioning 2.0.0 conventions.



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Abstract

This specification describes how the QualityLink aggregator discovers data sources exposed by higher education institutions and other data providers.

1. Introduction

1.1. Status of This Document

This document is a draft specification, developed by KIC and EUF within the [QualityLink](#) project. It is currently being discussed with the QualityLink Standards Consultation Board.

1.2. Goals and Rationale

The QualityLink project aims to develop a scalable architecture that allows higher education institutions and others to publish data on their learning opportunities in different interoperable formats easily. This specification describes how data sources can be exposed by higher education institutions and other data providers, and how they can be discovered by aggregators.

1.3. Audience

This specification is intended for use by higher education institutions and other data providers that would like their data to be available for aggregation.

Secondly, it targets data aggregators. The QualityLink project will implement a data aggregator to test and demonstrate this specification in practice.

1.4. Changes

n/a

2. Key Concepts

The following key concepts and terminology are used throughout the document, as well as other QualityLink specifications:

learning opportunity

an opportunity to realise a given set of learning outcomes through a learning activity or assessment [\[ELM\]](#). Offered by a [higher education institution](#) or [other provider](#). A learning opportunity can be part of a larger one and contain smaller ones. Specific learning opportunities are [courses](#), [modules](#) and [programmes](#).

learning opportunity specification

the general specification of a [learning opportunity](#), i.e. including the learning outcomes and credits. It is usually permanent and does not change from year to year or semester to semester.

learning opportunity instance

the specific offering of a [learning opportunity](#) in a specific academic term (e.g. year or semester) and specific setting (e.g. online vs face-to-face, different locations, ...). A single [learning opportunity specification](#) will usually be offered in many instances over time.

course

smallest learning opportunity that awards credits (i.e. ECTS) to the learner, either in the context of a study programme or as a self-standing offer. A course can be part of a [module](#) or [programme](#).

module

a [learning opportunity](#) that is a group or collection of [courses](#). A module may be part of a [programme](#).

micro-credential

a proof of the learning outcomes that a learner has acquired following a short learning experience. These learning outcomes have been assessed against transparent standards. [\[CR-MC\]](#)

programme

collection of [learning opportunities](#). Finalising a study programme usually leads to a degree (e.g. Bachelor degree, Master degree, etc.) or to another type of certificate, e.g. a [micro-credential](#), for a shorter programme. A programme is a "top-level" [learning opportunity](#) and has no parent.

joint programme

an integrated curriculum coordinated and offered jointly by different [higher education institutions](#), and leading to double/multiple degrees or a joint degree. [\[DEQAR\]](#)

education provider

any actor that provides degree programmes, micro-credentials or other [learning opportunities](#). This may include [higher education institutions](#) as well as [other providers](#), including employers, companies, social partners, NGOs, public authorities and others. [\[DEQAR\]](#)

higher education institution

an entity that has full degree awarding powers at higher education level (i.e. EQF levels 5 to 8; QF-EHEA cycle first to third) recognised by at least one national authority. [\[DEQAR\]](#)

other provider

an entity that provides learning opportunities, but that does not have officially-recognised authority to award degrees or other formally recognised qualifications.

data provider

an entity providing data on [learning opportunities](#). This can be an [education provider](#) providing data on its own learning opportunities or another organisation providing data on various [education providers](#).

aggregator

any service that harvests data from different [data providers](#), matches and compiles the data into one single dataset. For example, the aggregator service developed within the QualityLink project.

3. User Stories

The following usage scenarios illustrate ways in which this specification might be used or desired features it should enable:

3.1. Expose data

As a [higher education institution](#) or [education provider](#) I want to advertise my data source to a Europe-wide [aggregator](#) in a secure way, but without the need for additional action or manual intervention by another organisation.

3.2. Manage data sources

As manager of an [aggregator](#) (e.g. the QualityLink consortium) I want to manage trusted sources of [data providers](#) whose data should be integrated in the QualityLink platform.

3.3. Access statistics

As a [data provider](#) I want to access a dashboard or similar to manage my data sources and get insights/stats on how my data was harvested and processed.

4. Requirements

- The approach should be as flexible and as easy to adopt as possible for HEIs and other data providers.
- The approach should be scalable. Hence, data sources of HEIs need to be discovered automatically and without manual registration or intervention, in line with the policies defined above. (Authoritative sources and other data sources are managed manually, as each case will need to be screened against the applicable policies.)
- Discovery of data from education providers/HEIs should be based on data from the EWP Registry, the EUF HEI API and DEQAR (which includes all HEIs listed in ETER and OrgReg).

5. Manifest File

The location of one or several data files or API endpoints (see [Data Exchange](#) spec) is indicated in a simple, standardised “manifest” file published by the [data provider](#).

For authoritative sources and other data sources, the location of the manifest file is managed manually. For [higher education institutions](#) the location of the manifest file is auto-discovered as described in the following chapter.

The manifest file can be expressed as [\[JSON\]](#) or [\[YAML\]](#) file. The file must be a single object/mapping with at least a top-level key named `sources`. An additional `meta` key can be provided.

5.1. Data sources

`sources` must be an array/sequence of objects/mapping, each representing a data source of the provider. At least one data source must be specified. The following keys are supported for each source:

<i>type</i>* :	Type of the data source: string, using the identifier specified in [QL-EXCH]
<i>path</i>* :	File or API root: URL
<i>version</i>:	Version identifier: string (see data source type-specific information)
<i>id</i>:	Identifier of the data source: string
<i>name</i>:	Human-readable name or description: string
<i>auth</i>:	Authorisation: object/mapping including <code>type</code> and additional, access control strategy-specific parameters
<i>refresh</i>:	Minimum number of hours to wait between scheduled refreshes of the data source: integer

<i>headers:</i>	Additional HTTP header fields [HTTP-HDR] to include in every request to the data source: object with header field names as key and values as value
<i>queryParameters:</i>	Additional query parameters [RFC3986] to be added to the URL Query component in every request: object with parameter names as key and values as value

Keys marked with an asterisk are required. Additional, data source type-specific keys are specified in [\[QL-EXCH\]](#).

Note: There is no default for the `refresh` parameter and the interval is at the [aggregator's](#) discretion if not specified. The QualityLink aggregator will use a 24-hour interval by default.

5.2. Additional metadata

The `meta` key is optional and may be used to specify institutional identifiers. [Aggregators](#) may use this for diagnostic purposes or identify changed identifiers.

<i>schac</i> :	SCHAC code of the institution covered by the data source(s)
<i>eterid</i> :	ETER identifier, as used in the EHESO and OrgReg
<i>deqar</i> <i>id:</i>	DEQAR institutional identifier
<i>did:</i>	Decentralised Identifier (DID) used by the institution

5.3. JSON Schema

```
{  
  "$schema": "https://json-schema.org/draft/2020-12/schema",  
  "$id": "https://data.quality-link.eu/schema/manifest-v1.json",  
  "title": "QualityLink manifest file",  
  "description": "A manifest file listing data sources on learning  
opportunities.",  
  "type": "object",  
  "properties": {  
    "sources": {  
      "description": "Defines one or more data sources",  
      "type": "array",  
      "minItems": 1,  
      "items": {  
        "type": "object",  
        "properties": {  
          "type": {  
            "description": "Type of the data source: string, using  
the identifier specified in QualityLink Data Exchange  
Specification",  
            "type": "string",  
            "enum": [  
              "elm",  
              "ooapi",  
              "edu-api"  
            ]  
          }  
        }  
      }  
    }  
  }  
}
```

```
    },  
  
    "path": {  
        "description": "File or API root",  
        "type": "string",  
        "format": "uri",  
        "pattern": "^https?://"  
    },  
  
    "version": {  
        "description": "Version identifier (see data source  
type-specific information)",  
        "type": "string"  
    },  
  
    "id": {  
        "description": "Identifier of the data source",  
        "type": "string"  
    },  
  
    "name": {  
        "description": "Human-readable name or description",  
        "type": "string"  
    },  
  
    "auth": {  
        "description": "Authorisation parameters",  
        "type": "object",  
        "properties": {  
            "type": {
```

```
        "description": "Access control strategy required for  
this data source",  
  
        "type": "string",  
  
        "enum": [  
  
            "none",  
  
            "httpsig",  
  
            "httpheader",  
  
            "oauth2.0"  
  
        ]  
  
    },  
  
    "required": [  
  
        "type"  
  
    ]  
  
},  
  
"refresh": {  
  
    "description": "Minimum number of hours to wait between  
scheduled refreshes of the data source",  
  
    "type": "number"  
  
},  
  
"headers": {  
  
    "description": "Additional HTTP header fields to include  
in every request to the data source",  
  
    "type": "object"  
  
},  
  
"queryParameters": {
```



```
        "description": "Additional query parameters to be added  
to the URL Query component in every request",  
  
        "type": "object"  
    },  
  
    },  
  
    "required": [  
        "type",  
        "path"  
    ]  
}  
  
},  
  
"meta": {  
  
    "description": "Defines metadata about the institution  
providing the manifest file.",  
  
    "type": "object",  
  
    "properties": {  
  
        "schac": {  
  
            "description": "SCHAC code of the institution covered by  
the data source(s)",  
  
            "type": "string"  
        },  
  
        "eterid": {  
  
            "description": "ETER identifier, as used in the EHESO and  
OrgReg",  
  
            "type": "string"  
        },  
  
        "deqarid": {
```

```
    "description": "DEQAR institutional identifier",
    "type": "string"
  },
  "did": {
    "description": "Decentralised Identifier (DID) used by the
institution",
    "type": "string"
  }
}
},
"required": [
  "sources"
]
}
```

6. Discovery Mechanism

The specification offers two options how to auto-discover a manifest file.

[higher education institutions](#) may use either option. [Aggregators](#) must support both options.

6.1. DNS TXT Record

The [higher education institution](#) can create a DNS TXT record of the following format:

```
v=qldiscover1; m=[URL]
```

The URL must point to a manifest file.

6.2. Well-known URL

The [higher education institution](#) can place a manifest file at a URL of the form:

- `[DOMAIN]/.well-known/quality-link-manifest`
- `[DOMAIN]/.well-known/quality-link-manifest.json`
- `[DOMAIN]/.well-known/quality-link-manifest.yaml`

These locations are tried in this order and the first file found is used.

6.3. Domain Search Order

An [aggregator](#) should consider a combined list of [higher education institutions](#) appearing in one or more of the following datasets:

- EUF HEI API
- EWP Registry
- eduGAIN (?)
- DEQAR (including institutions from OrgReg and ETER)

For each [higher education institution](#), the [aggregator](#) attempts to fetch a manifest file from a known domain in this order:

1. domain/host name that is the [higher education institution](#)'s SCHAC code (if available)
2. host name of the [higher education institution](#)'s website (as indicated in OrgReg or DEQAR)
3. website host name stripped off `www` or similar generic first component
4. highest level registrable domain name determined from the website host name (i.e. public suffix \+ one further DNS component)

For each domain, both of the above mechanisms are tried.

Once a manifest file has successfully been obtained, no further domains or mechanisms are tried.

7. Security Considerations

The location and content of manifest files are not sensitive information. Access to data sources themselves can be protected as described in [\[QL-EXCH\]](#).

8. Examples

8.1. Manifest file

```
{  
  
  "meta": {  
  
    "schac": "example.ac.at",  
  
    "eterid": "AT4711",  
  
    "deqarid": "DEQARINST0815"  
  
  },  
  
  "sources": [  
  
    {  
  
      "type": "elm",  
  
      "path": "https://data.example.org/feed/elm.ttl",  
  
      "version": "3.2",  
  
      "auth": {  
  
        "type": "none"  
  
      }  
  
    },  
  
    {  
  
      "type": "ooapi",  
  
      "path": "https://data.example.org/ooapi/v5/",  
  
      "version": "5",  
  
      "auth": {  
  
        "type": "httpheader"  
  
      },  
  
      "id": "eua-courses-virt",  
  
    }  
  
  ]  
}
```

```
      "name": "Courses offered on the Alliance's virtual
campus"
    },
    {
      "type": "edu-api",
      "path": "https://edu-api.example.org/",
      "version": "1.0",
      "auth": {
        "type": "oauth2.0",
        "token_endpoint":
"https://auth.example.org/oauth2/get_token"
      },
      "name": "Experimental data source using Edu-API"
    }
  ]
}
```

meta:

schac: example.ac.at

eterid: AT4711

deqarid: DEQARINST0815

sources:

- type: elm

path: https://data.example.org/feed/elm.ttl

version: "3.2"

auth:

```
    type: none

- type: ooapi

  path: https://data.example.org/ooapi/v5/

  version: "5"

  auth:

    type: httpheader

  id: eua-courses-virt

  name: "Courses offered on the Alliance's virtual campus"

- type: edu-api

  path: https://edu-api.example.org/

  version: "1.0"

  auth:

    type: oauth2.0

    token_endpoint: https://auth.example.org/oauth2/get_token

  name: "Experimental data source using Edu-API"
```

Conformance

Conformance requirements are expressed with a combination of descriptive assertions and RFC 2119 terminology. The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in the normative parts of this document are to be interpreted as described in RFC 2119. However, for readability, these words do not appear in all uppercase letters in this specification.

All of the text of this specification is normative except sections explicitly marked as non-normative, examples, and notes. [\[RFC2119\]](#)

Examples in this specification are introduced with the words “for example” or are set apart from the normative text with `class="example"`, like this:

This is an example of an informative example.

Informative notes begin with the word “Note” and are set apart from the normative text with `class="note"`, like this:

Note, this is an informative note.

Index

Terms defined by this specification

[aggregator](#), in § 2
[course](#), in § 2
[data provider](#), in § 2
[education provider](#), in § 2
[higher education institution](#), in § 2
[joint programme](#), in § 2
[learning opportunity](#), in § 2
[learning opportunity instance](#), in § 2
[learning opportunity specification](#), in § 2
[micro-credential](#), in § 2
[module](#), in § 2
[other provider](#), in § 2
[programme](#), in § 2

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[ELM]

European Commission. [European Learning Model \(ELM\)](https://europa.eu/europass/elm-browser/index.html). v3. URL: <https://europa.eu/europass/elm-browser/index.html>

QualityLink Data Exchange Specification

https://specs.quality-link.eu/data_exchange.html

QualityLink Data Exchange Specification

Living Standard, 29 June 2026

Issue Tracking:

[GitHub](#)

[Inline In Spec](#)

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Task 3.6 (Creation of a Technical Trusted List Standard)

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This project has been funded with support from the European Commission. This website reflects the views only of the authors, and the Commission or the National Agency cannot be held responsible for any use which may be made of the information contained therein.

Abstract

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

1. Introduction

1.1. Status of This Document

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1.2. Goals and Rationale

The QualityLink project aims to develop a scalable architecture that allows higher education institutions and others to publish data on their learning opportunities in different interoperable formats easily. This specification describes the formats in which HEIs and other data providers can make data available for aggregation.

1.3. Audience

This specification is intended for use by higher education institutions and other data providers that would like their data to be available for aggregation.

Secondly, it targets data aggregators. The QualityLink project will implement a data aggregator to test and demonstrate this specification in practice.

1.4. Existing standards

- The European Learning Model [\[ELM\]](#) itself does not address the transport layer. The QDR uses RDF serialised as XML, which can be manually uploaded, hosted by the data provider and regularly pulled, or pushed by the data provider.
- [\[Edu-API\]](#), [\[OOAPI\]](#) and the [\[OCCAPI\]](#) define a REST API to expose the information in JSON format. Edu-API also plans additional bindings, e.g. async and message queues.
- The EWP Courses API [\[EWP-COURSES\]](#) defines an XML schema in which a list of courses should be returned.
- [\[DEQAR\]](#) and the Credential Registry each allow submission of data through manual entry, upload of a CSV file or use of a JSON-based REST API.

1.5. Changes

n/a

2. Key Concepts

The following key concepts and terminology are used throughout the document, as well as other QualityLink specifications:

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an opportunity to realise a given set of learning outcomes through a learning activity or assessment [\[ELM\]](#). Offered by a [higher education institution](#) or [other provider](#). A learning opportunity can be part of a larger one and contain smaller ones. Specific learning opportunities are [courses](#), [modules](#) and [programmes](#).

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the general specification of a [learning opportunity](#), i.e. including the learning outcomes and credits. It is usually permanent and does not change from year to year or semester to semester.

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a [learning opportunity](#) that is a group or collection of [courses](#). A module may be part of a [programme](#).

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a proof of the learning outcomes that a learner has acquired following a short learning experience. These learning outcomes have been assessed against transparent standards. [\[CR-MC\]](#)

programme

collection of [learning opportunities](#). Finalising a study programme usually leads to a degree (e.g. Bachelor degree, Master degree, etc.) or to another type of certificate, e.g. a [micro-credential](#), for a shorter programme. A programme is a "top-level" [learning opportunity](#) and has no parent.

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an integrated curriculum coordinated and offered jointly by different [higher education institutions](#), and leading to double/multiple degrees or a joint degree. [\[DEQAR\]](#)

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an entity that provides learning opportunities, but that does not have officially-recognised authority to award degrees or other formally recognised qualifications.

data provider

an entity providing data on [learning opportunities](#). This can be an [education provider](#) providing data on its own learning opportunities or another organisation providing data on various [education providers](#).

aggregator

any service that harvests data from different [data providers](#), matches and compiles the data into one single dataset. For example, the aggregator service developed within the QualityLink project.

manifest file

a file listing a [data provider's](#) data sources available for aggregation, as described in [\[QL-DISCO\]](#)

3. User Stories

The following usage scenarios illustrate ways in which this specification might be used or desired features it should enable:

3.1. Feed data

As a [higher education institution](#) I want to feed my data into a Europe-wide aggregator easily and flexibly, in order to avoid unnecessary burden.

3.2. Efficient aggregation

As a data aggregator I want to aggregate data from [higher education institutions](#) and other [data providers](#) efficiently, i.e. avoiding too much overhead or redundant data transfers.

3.3. Access control

As a [data provider](#) I want to ensure that only specified [aggregators](#) (e.g. the QualityLink one) can harvest my data.

4. Requirements

- [Data providers](#) should be able to choose between several widely-used formats in which to provide their data.
- [Data providers](#) must be able to implement access control mechanisms so that only the QualityLink aggregator can harvest their data.
- There needs to be a mechanism to indicate whether data has changed since the last harvest/connection.
- The QualityLink [aggregator](#) should be able to harvest data from several sources of one [data provider](#), e.g. different faculties or sub-units of a [higher education institution](#)

Note: The current version specifies a pull strategy only, where the QualityLink aggregator periodically polls the available data sources. A push option might be realised later.

5. Methods

The following sections outline the available data transport methods and formats, as well as their specific requirements.

A [data provider](#) may choose one or several options in which to provide their data.

An [aggregator](#) should support all formats described.

None of the formats mandate the use of encrypted connections, i.e. HTTPS, necessarily. [Data providers](#) should, however, use HTTPS wherever possible; the use of HTTPS is ensured by providing `https://` URIs in the [manifest file](#).

5.1. Static ELM File

Data on learning opportunities described in [\[ELM\]](#) format can be serialised as:

- RDF/XML (`application/rdf+xml`)
- Turtle (`text/turtle`)
- JSON-LD (`application/ld+json`)

The data source should return the correct content type for the serialisation used. If an incorrect content type is returned, the option to override the HTTP content-type header (see below) must be used.

5.1.1. Required Fields

The minimum required fields are defined by a set of [\[SHACL\]](#) constraints, which are based on the [\[ELM\]](#) Application Profile "Learning Opportunities and Qualifications".

ELM data must comply with the requirements specified by the shape

<http://data.quality-link.eu/ontology/v1#LearningOpportunity> [\[QL-ONT\]](#).

5.1.2. Incremental Transport

[Data providers](#) should implement at least one of two options:

- Provide an accurate `Last-Modified` [\[RFC9110\]](#) header in response to a HTTP `HEAD` request, indicating when the data was last changed/updated.
- Process the `If-Modified-Since` header if provided in a HTTP `HEAD` or `GET` request, return a `200` (OK) status code (and data in case of `GET`) only if modifications occurred, and a `304` (Not Modified) status code otherwise. [\[RFC9110\]](#)

[Aggregators](#) should harvest data sources less frequently if neither of the two options are implemented.

5.1.3. Metadata

[Data providers](#) must provide the following metadata in their [manifest file](#) for this method:

type: `elm`

path: a URL where the static file is hosted at

version: the ELM version used

[Data providers](#) can specify the following optional metadata:

contentType: override the HTTP content-type header and interpret data as the specified format (valid values are those listed above)

5.2. OOAPI

[Education providers](#) can expose data on their learning opportunities according to the Open Education API specification [\[OOAPI\]](#).

The [aggregator](#) may use the following endpoints to acquire data:

- `GET /education-specifications`
- `GET /education-specifications/{educationSpecificationId}`
- `GET /courses/{courseId}/offerings`
- `GET /courses/{courseId}/components`
- `GET /programs/{programId}/offerings`
- `GET /components/{componentId}/offerings`
- `GET /offerings/{offeringId}`

5.2.1. Required Fields

Per the OOAPI specification, the following fields are required:

- `primaryCode`
- `abbreviation`
- `name`
- `description`
- `teachingLanguage`
- `level` (for courses)
- `programType` (for programmes)

In addition, the following fields need to be present for the purposes of the QualityLink [aggregator](#) in order to align with ELM requirements:

- `fieldsOfStudy`
- `learningOutcomes`
- `levelOfQualification` (programme only)

5.2.2. Incremental Transport

While OOAPI does include the ability to query learning opportunities based on the year/semester in which they are offered, the standard does not include query parameters based on modification dates or similar.

Standard HTTP headers are, however, compatible with OOAPI and [data providers](#) should thus implement at least one of two options, at least for the `GET /education-specifications` endpoint:

- Provide an accurate `Last-Modified` [\[RFC9110\]](#) header in response to a HTTP `HEAD` request, indicate when the data was last changed/updated.
- Process the `If-Modified-Since` [\[RFC9110\]](#) header if provided in a HTTP request and only return data if modifications occurred.

5.2.3. Metadata

[Data providers](#) must provide the following metadata in their [manifest file](#) for this method:

type: `ooapi`

path: the URL of the OOAPI root

version: the OOAPI version implemented

[Data providers](#) can specify the following optional metadata:

pageSize: the page size the [aggregator](#) should use when making requests to list endpoints (default: `250` - options: `10`, `20`, `50`, `100`, `250`)

5.3. Edu-API

[Education providers](#) can expose data on their learning opportunities using the Edu-API specification [\[Edu-API\]](#), a RESTful API standard maintained by 1EdTech. This method

delivers JSON-formatted responses and supports real-time querying of educational data, such as courses and programs, making it suitable for dynamic aggregation scenarios.

The [aggregator](#) may use the following endpoints to acquire data (non-exhaustive list, based on Edu-API Core):

- `GET /courses` - Retrieve a list of courses.
- `GET /courses/{courseId}` - Retrieve details of a specific course.
- `GET /programs` - Retrieve a list of programs.
- `GET /programs/{programId}` - Retrieve details of a specific program.

Additional endpoints (e.g., for offerings or components) may be supported depending on the provider's implementation.

5.3.1. Required Fields

The Edu-API specification defines a core set of fields for [learning opportunities](#), aligned with its *Learning Resource Core* profile. At a minimum, [data providers](#) must include:

- `id`: Unique identifier for the learning opportunity.
- `title`: Name or title of the course or program.
- `description`: Brief description of the learning opportunity.
- `type`: Type of learning opportunity (e.g., "Course", "Program").
- `primaryCode`:
- `level`:
- `gradingScheme`:
- `teachingLanguage` / `recordLanguage`:

In addition, the fields `credits` and `learningOutcomes` are recommended to align with the European Learning Model [\[ELM\]](#) and QualityLink goals. Providers should refer to the Edu-API *Learning Resource Core* bindings for full details.

5.3.2. Incremental Updates

The [\[Edu-API\]](#) specification includes a `dateLastModified` property in resource responses (e.g., for courses and programs), indicating the last modification date in ISO 8601 format.

This property enables tracking changes to individual resources and can be combined with the `filter` parameter on collections like `GET /courses` or `GET /programs` to support efficient aggregation, providing patterns for both initial bulk loads and delta updates, [data providers](#) and [aggregators](#) should follow this choreography where possible:

- **Initial or Bulk Load:** The [aggregator](#) makes a series of "get all" requests (e.g., `GET /courses`, `GET /programs`) to retrieve all resources needed, establishing a baseline dataset. The `dateLastModified` value for each resource should be recorded for subsequent delta updates.
- **Delta or True-Up:** The [aggregator](#) repeats the "get all" requests, ideally using a filter on `dateLastModified` (e.g., `GET /courses?modifiedAfter=2025-03-01T00:00:00Z`) to retrieve only resources modified since the last sync. If this filter is not supported, the [aggregator](#) must fetch the full collection and compare `dateLastModified` values locally against the last sync timestamp.

The QualityLink [aggregator](#) may use the `dateLastModified` value from previous responses to determine which resources have changed since the last harvest.

5.3.3. Metadata

[Data providers](#) must provide the following metadata in their [manifest file](#) for this method:

type: `edu-api`

path: The URL of the Edu-API root (e.g.,
`https://provider.example.edu/edu-api/v1/`)

version: The Edu-API version implemented (e.g., `1.0`)

[Data providers](#) can specify the following optional metadata:

pageSize: the maximum page size the [aggregator](#) should use when making requests to list endpoints (default: 500)

5.3.4. Authentication with OAuth 2.0

Edu-API mandates the use of OAuth 2.0 for securing API endpoints, ensuring that only authorized [aggregators](#) (e.g., the QualityLink aggregator) can access protected data. [Data providers](#) must implement OAuth 2.0 as specified below.

5.4. OCCAPI

The [aggregator](#) may use the following endpoints to acquire data:

- `GET /hei/{heiId}`
- `GET /hei/{heiId}/course`
- `GET /hei/{heiId}/course/{courseId}`
- `GET /hei/{heiId}/ounit`
- `GET /hei/{heiId}/ounit/{ounitId}`
- `GET /hei/{heiId}/ounit/{ounitId}/course`
- `GET /hei/{heiId}/ounit/{ounitId}/programme`
- `GET /hei/{heiId}/programme`
- `GET /hei/{heiId}/programme/{programmeId}`
- `GET /hei/{heiId}/programme/{programmeId}/course`

OCCAPI makes use of hypermedia links to indicate which collection endpoints are available, scoped to [higher education institution](#) and optionally to organisational units and [programme](#) resources.

5.4.1. Required fields

Data required in any resource type:

- `type`
- `id`
- `title`
- `lastModified`

Data attributes required for [higher education institutions](#) and organisational units:

- `heiId` or `ounitId` (for [higher education institutions](#) and organisational units respectively)

Data attributes required for both [programme](#) and [course](#) resources:

- `code`
- `description`
- `ects`
- `languageOfInstruction`
- `learningOutcomes`

Data attributes required for [programme](#) resources only:

- `eqfLevelProvided`
- `iscedCode`
- `length`

Data attributes required for [course](#) resources only:

- `academicTerm`

5.4.2. Recommended fields

OCCAPI v2 provides support for ELM controlled vocabularies depending on the resource type.

In [programme](#) resources the following ELM controlled vocabularies are supported:

- `elmLearningOpportunityType` (limited to certain terms)
- `elmLearningScheduleType`
- `elmModeOfLearning`

In [course](#) resources the following ELM controlled vocabularies are supported:

- `elmAssessmentType`
- `elmLearningActivityType`
- `elmLearningOpportunityType` (limited to certain terms)
- `elmModeOfLearning`

Additionally, [course](#) resources may include `iscedCode` as well.

5.4.3. Metadata

[Data providers](#) must provide the following metadata in their [manifest file](#) for this method:

```
type      occapi
:
```

```
path      The URL of the OCCAPI path for a given HEI
:         (e.g., https://domain.tld/occapi/v2/hei/{heiId})
```

6. Access Control

Currently all transport methods operate over HTTP. Hence the following access control strategies can all be used for either method.

A [data provider](#) may choose one of the strategies if they wish to control access to their data, but no access control is required.

An [aggregator](#) should support all formats described.

The exchange of access credentials or additional data that some of these options might require (e.g. certificates, trusted IPs, or client/secrets) is an out-of-band activity. The details of this are to be agreed between the [aggregator](#) and [data providers](#) during an onboarding/discovery process; the following sections describe in general terms what out-of-band communication is required.

6.1. Based on IP address

A [data provider](#) can limit access to certain ranges of IP addresses. To that end, [aggregators](#) should publish the IP address ranges from which their services may contact the exposed methods.

[Data providers](#) can omit the `auth` key from their [manifest file](#) or provide the following metadata for this method:

```
type      none
:
```

This mechanism does not require **out-of-band communication** beyond the [aggregator](#) publishing its IP address range.

Note: The QualityLink aggregator will publish the IP address range from which it operates at <https://quality-link.eu/step-by-step/technical/>.

6.2. HTTP Request Header

The [data provider](#) may request that the [aggregator](#) include a specific HTTP header in all requests, e.g. a secret token.

To avoid the need for out-of-band communication, the [aggregator](#) should publish an RSA public key [\[rfc8017\]](#) for [data providers](#) to encrypt their secret with. The encrypted secret can be placed in the manifest file, will be decrypted by the [aggregator](#) and returned in clear text with every request.

[Data providers](#) must provide the following metadata under `auth` in their [manifest file](#) for this method:

```
type      httpheader
:
```

field: a valid HTTP request header field name [\[HTTP-HDR\]](#)

value: value for the given field, encrypted using the [aggregator's](#) RSA public key [\[rfc8017\]](#) and Base64-encoded

[Data providers](#) can encrypt their secret using the OpenSSL command-line utility.

Assuming that the [aggregator's](#) public key is saved as `aggregator_pub.pem`, the following command will return a secret suitable for inclusion in the manifest file:

```
echo -n "my secret" | openssl pkeyutl -encrypt -pkeyopt  
rsa_padding_mode:oaep -pubin -inkey aggregator_pub.pem | base64
```

Note: The QualityLink aggregator will publish its RSA public key at <https://quality-link.eu/step-by-step/technical/>.

The current approach limits plaintext secrets to a maximum length of ca. 214 bytes, see [issue #12](#).

6.3. OAuth 2.0

A [data provider](#) may secure their endpoints using OAuth 2.0, requiring the [aggregator](#) to authenticate via an access token. This method is the standard authentication mechanism of [\[Edu-API\]](#) (see [§ 5.3.4 Authentication with OAuth 2.0](#)).

[Data providers](#) must implement OAuth 2.0 as follows:

- **Grant Type:** Support the *Client Credentials Grant* (per [\[RFC6749\]](#), Section 4.4) for machine-to-machine authentication, suitable for aggregator access without user interaction.
- **Token Endpoint:** Provide a dedicated OAuth 2.0 token endpoint (e.g., `https://provider.example.edu/oauth/token`) where the [aggregator](#) can obtain an access token.
- **Scopes:** Define scopes to limit access (e.g. `http://purl.1edtech.org/spec/eduapi/v1p0/scope/core.readonly` for read-only access to [learning opportunity](#) data).

[Data providers](#) further should:

- Issue access tokens with a reasonable expiration time (e.g., 1 hour) and support refresh tokens.
- Validate tokens server-side per [\[RFC6750\]](#) (Bearer Token Usage).

An [aggregator](#) must support the following:

- **Grant Type:** Support OAuth 2.0 Client Credentials Grant as a minimum and use the mechanism described in Section 2.3.1 of [\[RFC6749\]](#).
- **Credentials:** Obtain and securely store client credentials (`client_id` and `client_secret`) provided by the [data provider](#).
- **Access Token:** The [aggregator](#) must request and include a valid OAuth 2.0 Bearer token in the `Authorization` header of each request (i.e. `Authorization: Bearer <token>` per [\[RFC6750\]](#)).
- Handle token expiration and renewal gracefully.

[Data providers](#) must provide the following metadata under `auth` in their [manifest file](#) for this method:

<code>type:</code>	<code>oauth2.0</code>
<code>token_endpoint:</code>	URI of the OAuth 2.0 token endpoint to use
<code>scope:</code>	scope that the aggregator should specify when requesting a token (optional)
<code>client_id:</code>	client ID to provide in the token request (optional)
<code>client_secret:</code>	client secret, encrypted in the same way as specified in § 6.2 HTTP Request Header above (optional)

This method requires that client credentials (`client_id` and `client_secret`) are either passed encrypted in the manifest file or through **out-of-band communication** in which the [data provider](#) supplied the [aggregator](#) with those credentials.

6.4. HTTP Signature

A [data provider](#) may request that the [aggregator](#) authenticates itself by signing all HTTP requests using HTTP Message Signatures according to [\[RFC9421\]](#).

The [aggregator](#) must provide a signature that covers the `@authority` component as well as the following signature parameters (see Section 2.3 of [\[RFC9421\]](#)):

- `created`: signature creation time (UNIX timestamp)
- `expires`: expiration time (UNIX timestamp), at most 1 hour after creation time
- `alg`: the signature algorithm
- `keyid`: the identifier for the key used (from the list published by the aggregator)
- `tag`: `qualitylink-v1` to identity the purpose

The [aggregator](#) must publish the following information in order to allow [data providers](#) to verify its signatures:

- A (list of) supported signature algorithm(s) (`alg`), including only algorithms based on asymmetric cryptography
- One public key per supported signature algorithm, together with a `keyid` that will be used

A [data provider](#) must support one of signature algorithm(s) supported by the [aggregator](#). Unless it supports all algorithms, it needs to select the desired algorithm in the [manifest file](#).

The [data provider](#) should handle requests that are authenticated by a verified HTTP Message Signature, i.e. verify against the [aggregator's](#) public key, are applicable to the [data provider](#) based on the `@authority` component and are valid based on the `expires` parameter. If the [data provider](#) receives a request without a HTTP Message Signature, it should return a 401 (Unauthorized) response unless the request could be authenticated through another mechanism. If the request cannot be authenticated, the [data provider](#) should return a 403 (Forbidden) response. If the request contains corrupted or invalid `Signature` or `Signature-Input` headers, the [data provider](#) should return a 400 (Bad Request) response.

[Data providers](#) must provide the following metadata under `auth` in their [manifest file](#) for this method:

```
type    httpsig
:
```

alg: one of the algorithms the aggregator supports (optional)

This mechanism does not require **out-of-band communication** beyond the [aggregator](#) publishing the information mentioned above.

7. Security Considerations

The previous chapter describes how [data providers](#) can implement access control to their exposed data. The authors are aware that these mechanisms do not provide perfect security, e.g. IP addresses could be spoofed and HTTP Message Signatures could be replayed for a short amount of time if compromised. The approach to encrypting HTTP header values might be imperfect for highly sensitive data due to the static public-private key pair used by the [aggregator](#).

This specification is, however, about exchange of data on [learning opportunities](#), which is generally meant to be public. The authors consider the described options reasonably secure for the purposes of limiting unauthorised harvesting of data.

[Data providers](#) should not expose any data through the methods described herein that is not meant to be public, especially no personal data.

Conformance

Conformance requirements are expressed with a combination of descriptive assertions and RFC 2119 terminology. The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in the normative parts of this document are to be interpreted as described in RFC 2119. However, for readability, these words do not appear in all uppercase letters in this specification.

All of the text of this specification is normative except sections explicitly marked as non-normative, examples, and notes. [\[RFC2119\]](#)

Examples in this specification are introduced with the words “for example” or are set apart from the normative text with `class="example"`, like this:

This is an example of an informative example.

Informative notes begin with the word “Note” and are set apart from the normative text with `class="note"`, like this:

Note, this is an informative note.

Index

Terms defined by this specification

[aggregator](#), in § 2
[course](#), in § 2
[data provider](#), in § 2
[education provider](#), in § 2
[higher education institution](#), in § 2
[joint programme](#), in § 2
[learning opportunity](#), in § 2
[learning opportunity instance](#), in § 2
[learning opportunity specification](#), in § 2
[manifest file](#), in § 2
[micro-credential](#), in § 2
[module](#), in § 2
[other provider](#), in § 2
[programme](#), in § 2

References

Normative References

[Edu-API]

1EdTech. [Edu-API Specification](https://www.imsglobal.org/spec/eduapi/v1p0#uc1). Candidate Final. URL:
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[ELM]

European Commission. [European Learning Model \(ELM\)](https://europa.eu/europass/elm-browser/index.html). v3. URL:
<https://europa.eu/europass/elm-browser/index.html>

[HTTP-HDR]

IANA. [Hypertext Transfer Protocol \(HTTP\) Field Name Registry](https://www.iana.org/assignments/http-fields/http-fields.xhtml). URL: <https://www.iana.org/assignments/http-fields/http-fields.xhtml>

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D. Hardt, Ed.. [The OAuth 2.0 Authorization Framework](https://www.rfc-editor.org/info/rfc6749/). October 2012. Proposed Standard. URL: <https://www.rfc-editor.org/info/rfc6749/>

[RFC6750]

M. Jones; D. Hardt. [The OAuth 2.0 Authorization Framework: Bearer Token Usage](https://www.rfc-editor.org/info/rfc6750/). October 2012. Proposed Standard. URL: <https://www.rfc-editor.org/info/rfc6750/>

[RFC8017]

K. Moriarty, Ed.; et al. [PKCS #1: RSA Cryptography Specifications Version 2.2](https://www.rfc-editor.org/info/rfc8017/). November 2016. Informational. URL: <https://www.rfc-editor.org/info/rfc8017/>

[RFC9110]

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[RFC9421]

A. Backman, Ed.; J. Richer, Ed.; M. Sporny. [HTTP Message Signatures](#). February 2024. Proposed Standard. URL: <https://www.rfc-editor.org/info/rfc9421/>

[SHACL]

Holger Knublauch; Dimitris Kontokostas. [Shapes Constraint Language \(SHACL\)](#). URL: <https://w3c.github.io/data-shapes/shacl/>

Non-Normative References

[CR-MC]

European Union. [Council Recommendation on a European approach to micro-credentials for lifelong learning and employability](#). 16 June 2022. 2022/C 243/02. URL: [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022H0627\(02\)](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32022H0627(02))

[DEQAR]

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[EWP-COURSES]

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[OCCAPI]

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Issues Index

The current approach limits plaintext secrets to a maximum length of ca. 214 bytes, see [issue #12](#).

QualityLink Ontology and Application Profile (SHACL constraints)

<https://specs.quality-link.eu/resources/ontology-shacl.html>

QualityLink Ontology and Application Profile

13 February 2025, edited in place 31 May 2026

More details about this document

Latest published version:

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[Commit history](#)

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<http://data.europa.eu/snb/model/ontology/>

Format **JSON LD**

Format **RDF/XML**

Format **N Triples**

Format **TTL**

1. Abstract

The QualityLink ontology and application profile build on the European Learning Model (ELM). They defines additional classes and properties to describe things not currently covered in ELM.

2. Namespaces

Prefix	Namespace
adms	http://www.w3.org/ns/adms#
dcterms	http://purl.org/dc/terms/
elm	http://data.europa.eu/snb/model/ontology/
foaf	http://xmlns.com/foaf/0.1/
ql	http://data.quality-link.eu/ontology/v1#
rdf	http://www.w3.org/1999/02/22-rdf-syntax-ns#
rov	http://www.w3.org/ns/regorg#
skos	http://www.w3.org/2004/02/skos/core#
xsd	http://www.w3.org/2001/XMLSchema#

3. Description

The QualityLink ontology extends the European Learning Model (ELM) ontology by additional classes and properties required in the context of the QualityLink project.

The additional classes and properties describe things not currently covered in ELM, including certain quality indicators with relevance for the project.

QualityLink further defines an application profile defined as SHACL constraints, which are based on the ELM Learning Opportunities and Qualifications (LOQ) application profile. The application profile is used by the QualityLink pilot aggregator. The QualityLink profile only adds optional properties to the ELM profile, no required ones.

The QualityLink ontology and profile were originally developed based on ELM 3.2 and ELM 3.3.1 (LOQ profile v1.3.0).

The profile references the [ELM controlled vocabularies](#) published by the EU.

4. Main Entities

4.1 Learning Opportunity Specification

```
http://data.quality-link.eu/ontology/v1#LearningOpportunitySpecification
```

4.1.1 General description

Description

The abstract specification of an opportunity to acquire a given set of learning outcomes, e.g. the general specification of a course, programme or module offered by an education provider.

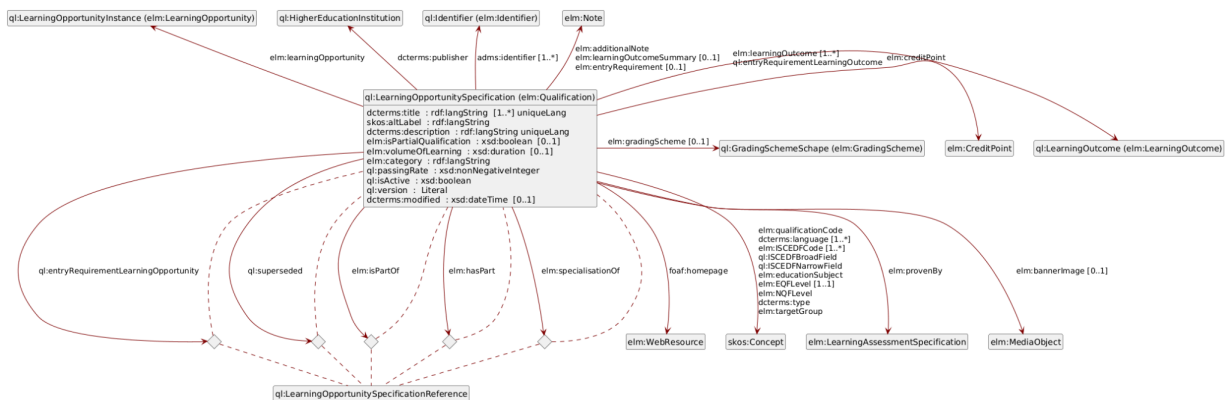
This class and its shape are based on the ELM *LearningAchievementSpecificationShape* and *QualificationShape*.

Different from the ELM LOQ profile, the shapes are defined as open. Properties that are not used/interpreted by the QualityLink data aggregator have been omitted to simplify the shapes.

Targets

- Applies to: [elm:Qualification](#) | [elm:LearningAchievementSpecification](#)

4.1.2 Diagram



[ql:LearningOpportunitySpecification \(elm:Qualification\)](#)
[dcterms:title : rdf:langString \[1..*\]](#)
[uniqueLangskos:altLabel : rdf:langStringdcterms:description : rdf:langString](#)
[uniqueLangelm:isPartialQualification : xsd:boolean \[0..1\]](#)
[elm:volumeOfLearning : xsd:duration \[0..1\]](#)
[elm:category : rdf:langStringql:passingRate :](#)
[xsd:nonNegativeIntegerql:isActive : xsd:booleanql:version : Literal](#)
[dcterms:modified : xsd:dateTime \[0..1\]](#)
[ql:LearningOpportunitySpecificationReference](#)
[elm:Noteelm:WebResourceql:Lear](#)
[ningOutcome \(elm:LearningOutcome\)ql:Identifier](#)
[\(elm:Identifier\)skos:Conceptelm:CreditPointql:HigherEducationInstitution](#)
[elm:Learning](#)
[AssessmentSpecificationql:GradingSchemeScape](#)
[\(elm:GradingScheme\)ql:LearningOpportunityInstance](#)
[\(elm:LearningOpportunity\)elm:MediaObjectql:entryRequirementLearningOpportunityql:](#)
[supersededelm:isPartOfelm:hasPartelm:specialisationOfelm:additionalNoteelm:learnin](#)
[gOutcomeSummary \[0..1\]elm:entryRequirement](#)
[\[0..1\]foaf:homepageelm:learningOutcome](#)
[\[1..*\]ql:entryRequirementLearningOutcomeadms:identifier](#)
[\[1..*\]elm:qualificationCode](#)
[dcterms:language \[1..*\]elm:ISCEDFCode](#)
[\[1..*\]ql:ISCEDFBroadFieldql:ISCEDFNarrowFieldelm:educationSubjectelm:EQFLevel](#)

[1..1]elm:NQFLeveldcterms:typeelm:targetGroupelm:creditPointdcterms:publisherelm:provenByelm:gradingScheme [0..1]elm:learningOpportunityelm:bannerImage [0..1]

Click diagram to navigate to corresponding section | [View as PNG](#)

4.1.3 Properties

Property name	URI	Expected value	Card.
publisher	dcterms:publisher	Higher Education Institution	0..*
→ Publisher, typically the education provider that will offer instances of this learning opportunity; if not provided, the publisher will be inferred to be the institution providing the data source.			
identifier	adms:identifier	Identifier	1..*
→ Identifier or code, normally assigned by the publisher			
qualification code	elm:qualificationCode	skos:Concept	0..*
→ Identifying code from a qualification-based reference semantic asset, normally assigned by a different entity than the publisher, e.g. a national qualifications authority			
title	dcterms:title	rdf:langString	1..*

→ Primary name or title; one value per language is permitted

alternative name	<u>skos:altLabel</u>	<code>rdf:langString</code>	0..*
------------------	--------------------------------------	-----------------------------	------

→ Alternative name(s)

description	<u>dcterms:description</u>	<code>rdf:langString</code>	0..*
-------------	--	-----------------------------	------

→ Free text description of the learning opportunity; one value per language is permitted

more information	<u>elm:additionalNote</u>	<u>elm>Note</u>	0..*
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→ Additional free text note(s)

homepage	<u>foaf:homepage</u>	<u>elm:WebResource</u>	0..*
----------	--------------------------------------	--	------

→ Web page of the learning opportunity

learning outcomes	<u>elm:learningOutcome</u>	<u>Learning Outcome</u>	1..*
-------------------	--	---	------

→ Intended learning outcomes (one by one)

learning outcome summary	elm:learningOutcome Summary	elm:Note	0..1
-----------------------------	---	--------------------------	------

→ Summary of the intended learning outcomes

language	dcterms:language	skos:Concept	1..*
----------	----------------------------------	------------------------------	------

→ Language(s) in which this learning opportunity is offered; should be provided using the Language Named Authority List

thematic area	elm:ISCEDFCode	skos:Concept	1..*
---------------	--------------------------------	------------------------------	------

→ Field according to the ISCED-F 2013 Classification; should be provided using the ISCED-F controlled vocabulary

thematic area (broad field)	ql:ISCEDFBroadField	skos:Concept	0..*
--------------------------------	-------------------------------------	------------------------------	------

→ ISCED-F 2013 field, truncated to 2-digit broad field

thematic area (narrow field)	ql:ISCEDFNarrowField	skos:Concept	0..*
---------------------------------	--------------------------------------	------------------------------	------

→ ISCED-F 2013 field, truncated to 3-digit narrow field

education subject	elm:educationSubject	skos:Concept	0..*
-------------------	--------------------------------------	------------------------------	------

→ Field of education from another semantic framework than ISCED-F

EQF level	elm:EQFLevel	skos:Concept	1..1
-----------	------------------------------	------------------------------	------

→ Level as specified by the European Qualification Framework (EQF); should be provided using the EQF controlled vocabulary

partial qualification	elm:isPartialQualification	xsd:boolean	0..1
-----------------------	--	-----------------------------	------

→ Indicates whether a qualification is a full qualification or part of another qualification

NQF level	elm:NQFLevel	skos:Concept	0..*
-----------	------------------------------	------------------------------	------

→ Level as specified by the relevant national qualification framework(s); should be provided using the Qualifications Framework controlled vocabulary

credit points	elm:creditPoint	elm:CreditPoint	0..*
---------------	---------------------------------	---------------------------------	------

→ Credit points allocated; should be using ECTS

workload	elm:volumeOfLearning	xsd:duration	0..1
→ Estimation of the time the learner would need to complete all learning activities (e.g. lectures, seminars, projects, practical work, traineeships and individual or self-directed study, including exam preparation) to achieve the learning outcomes			
type	dcterms:type	skos:Concept	0..*
→ Category, provided using the Learning opportunity type controlled vocabulary			
category	elm:category	rdf:langString	0..*
→ Category, provided as free-text string			
target group	elm:targetGroup	skos:Concept	0..*
→ Specific target group or category of learners for which this learning opportunity is designed; should be provided using the Target group controlled vocabulary			
entry requirement	elm:entryRequirement	elm>Note	0..1
→ Entry requirement or prerequisites, described as free text			

required learning opportunity for entry	gl:entryRequirement LearningOpportunity	Learning Opportunity Specification or Learning Opportunity Specification Reference	0..*
--	--	--	------

→ Specific entry requirement or prerequisite to have completed another learning opportunity.

required learning outcome for entry	gl:entryRequirement LearningOutcome	Learning Outcome	0..*
--	--	----------------------------------	------

→ Specific entry requirement or prerequisite to have achieved a particular learning outcome.

proven by	elm:provenBy	elm:LearningAssessmentSpecification	0..*
-----------	------------------------------	---	------

→ Description of the assessment methods

grading scheme	elm:gradingScheme	Grading Scheme	0..1
----------------	-----------------------------------	--------------------------------	------

→ Information on the grading scheme used, optionally incl. grade distribution information

passing rate	ql:passingRate	xsd:nonNegativeInteger	0..*
--------------	--------------------------------	------------------------	------

→ The percentage of learners who pass on average.

is active	ql:isActive	xsd:boolean	0..*
-----------	-----------------------------	-------------	------

→ Learning Opportunity Specification is active, i.e. instances are currently offered or the education provider expects that instances will still be offered in the future.

version	ql:version	Literal	0..*
---------	----------------------------	---------	------

→ A number or other identifier that indicates the version of the Learning Opportunity specification.

superseded	ql:superseded	Learning Opportunity Specification or Learning Opportunity Specification Reference	0..*
------------	-------------------------------	--	------

→ Learning Opportunity specification superseded another one, which is no longer (or temporarily not) offered.

is part of	<u>elm:isPartOf</u>	<u>Learning Opportunity Specification</u> or <u>Learning Opportunity Specification Reference</u>	0..*
------------	-------------------------------------	--	------

→ Another learning opportunity of which this one is a part, e.g. a course can be part of a programme

has part	<u>elm:hasPart</u>	<u>Learning Opportunity Specification</u> or <u>Learning Opportunity Specification Reference</u>	0..*
----------	------------------------------------	--	------

→ Another learning opportunity that is part of this one, e.g. a programme can consist of several courses

specialisation of	<u>elm:specialisationOf</u>	<u>Learning Opportunity Specification</u> or <u>Learning Opportunity Specification Reference</u>	0..*
-------------------	---	--	------

→ A specification (e.g. a qualification standard) that this learning opportunity implements

instance	<u>elm:learningOpportunity</u>	<u>Learning Opportunity Instance</u>	0..*
----------	--	--	------

→ A concrete instance or offering of this specification

banner image	<u>elm:bannerImage</u>	<u>elm:MediaObject</u>	0..1
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→ An image that can be used for display of this learning opportunity

last modified	<u>dcterms:modified</u>	<u>xsd:dateTime</u>	0..1
---------------	---	-------------------------------------	------

→ Date when the specification was last modified

4.1.4 Usage

**Learning
Opportunity
Specification**

[required learning opportunity for entrysupersededis part ofhas partspecialisation of](#)

4.2 Learning Opportunity Instance

<http://data.quality-link.eu/ontology/v1#LearningOpportunityInstance>

4.2.1 General description

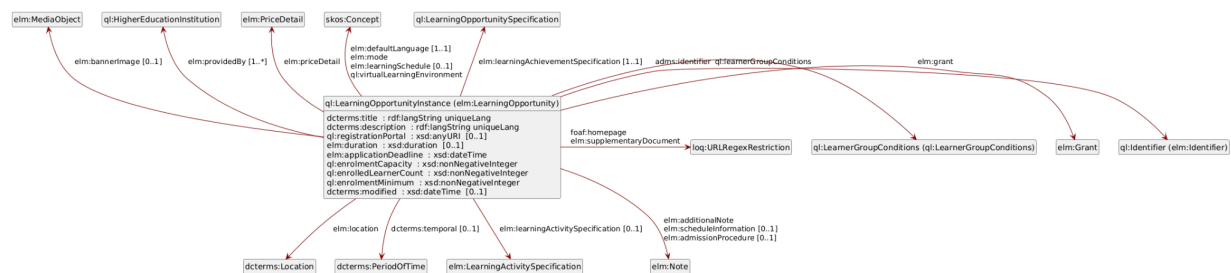
Description

A concrete instance or offering of a learning opportunity, e.g. a course, programme or module as offered in a specific academic year or semester.

Targets

- Applies to: [elm:LearningOpportunity](#)

4.2.2 Diagram



[ql:LearningOpportunityInstance \(elm:LearningOpportunity\)](#)
[dcterms:title : rdf:langString](#)
[uniqueLang](#)
[dcterms:description : rdf:langString](#)
[uniqueLang](#)
[ql:registrationPortal : xsd:anyURI \[0..1\]](#)
[elm:duration : xsd:duration \[0..1\]](#)
[elm:applicationDeadline : xsd:dateTime](#)
[ql:enrolmentCapacity : xsd:nonNegativeInteger](#)
[ql:enrolledLearnerCount : xsd:nonNegativeInteger](#)
[ql:enrolmentMinimum : xsd:nonNegativeInteger](#)
[dcterms:modified : xsd:dateTime \[0..1\]](#)
[ql:LearningOpportunitySpecification](#)
[dcterms:Location](#)
[ql:Identifier \(elm:Identifier\)](#)
[skos:Concept](#)
[dcterms:PeriodOfTime](#)
[elm:Grant](#)
[elm:PriceDetail](#)
[elm:LearningActivitySpecification](#)
[ql:LearnerGroupConditions](#)
[ql:HigherEducationInstitution](#)
[elm:Note](#)
[log:URLRegexRestriction](#)
[elm:MediaObject](#)
[elm:learningAchievementSpecification \[1..1\]](#)
[elm:location](#)
[adms:identifier](#)
[elm:defaultLanguage \[1..1\]](#)
[elm:mode](#)
[elm:learningSchedule \[1..1\]](#)
[ql:virtualLearningEnvironment](#)
[dcterms:temporal \[0..1\]](#)
[elm:grant](#)
[elm:priceDetail](#)
[elm:learningActivitySpecification \[0..1\]](#)
[ql:learnerGroupConditions](#)
[elm:providedBy \[0..1\]](#)
[elm:additionalNote \[1..*\]](#)
[elm:scheduleInformation \[0..1\]](#)
[elm:admissionProcedure \[0..1\]](#)
[foaf:homepage](#)
[elm:supplementaryDocument \[0..1\]](#)
[elm:bannerImage \[0..1\]](#)

Click diagram to navigate to corresponding section | [View as PNG](#)

4.2.3 Properties

Property name	URI	Expected value	Card.
learning opportunity specification	elm:learningAchievementSpecification	gl:LearningOpportunitySpecification	1..1
→ Specification of which this is an instance			
provided by	elm:providedBy	Higher Education Institution	1..*
→ The institution(s) providing this instance of the learning opportunity			
identifier	adms:identifier	Identifier	0..*
→ An identifier of this instance or offering, assigned by the provider			
title	dcterms:title	rdf:langString	0..*
→ Primary name or title of this instance, if different from the specification; one value per language is permitted			
description	dcterms:description	rdf:langString	0..*

→ Free text description of this instance/offering; one value per language is permitted

more information	elm:additionalNote	elm:Note	0..*
------------------	------------------------------------	--------------------------	------

→ Additional free text note(s)

homepage	foaf:homepage	URL	0..*
----------	-------------------------------	---------------------	------

→ Web page of this particular instance/offering

registration portal	gl:registrationPortal	xsd:anyURI	0..1
---------------------	---------------------------------------	----------------------------	------

→ A web page at which one can register or enrol for a Learning Opportunity.

other documents	elm:supplementaryDocument	URL	0..*
-----------------	---	---------------------	------

→ A public web document containing additional documentation about the Learning Opportunity.

specific conditions for learner group	gl:learnerGroupConditions	Learner Group Conditions	0..*
---------------------------------------	---	--	------

→ Indicates specific conditions that apply to a certain target group of learners

language	<u>elm:defaultLanguage</u>	<u>skos:Concept</u>	1..1
----------	--	-------------------------------------	------

→ Language in which this instance is delivered; should be provided using the Language Named Authority List

mode	<u>elm:mode</u>	<u>skos:Concept</u>	0..*
------	---------------------------------	-------------------------------------	------

→ Mode of learning and assessment, provided using the Modes of learning and assessment controlled vocabulary

location	<u>elm:location</u>	<u>dcterms:Location</u>	0..*
----------	-------------------------------------	---	------

→ Location where this instance/offering is delivered

learning schedule	<u>elm:learningSchedule</u>	<u>skos:Concept</u>	0..1
-------------------	---	-------------------------------------	------

→ The type of schedule in which this instance is delivered; should be provided using the Learning schedule type controlled vocabulary.

term	<u>dcterms:temporal</u>	<u>dcterms:PeriodOfTime</u>	0..1
------	---	---	------

→ Period of time in which this instance is offered, e.g. a semester

schedule information	elm:scheduleInformation	elm:Note	0..1
----------------------	---	--------------------------	------

→ Detailed information about the timetable or schedule, may include weekly schedules (e.g. 'Every Monday, 4pm') or the overall schedule (e.g. October: lectures, November: group-work, December: break, January: assessment)

duration	elm:duration	xsd:duration	0..1
----------	------------------------------	------------------------------	------

→ The duration during which this instance will be offered

admissions procedure	elm:admissionProcedure	elm:Note	0..1
----------------------	--	--------------------------	------

→ Information on how to apply for this instance/offering

application deadline	elm:applicationDeadline	xsd:dateTime	0..*
----------------------	---	------------------------------	------

→ The deadline for applying for this instance/offering

enrolment capacity	gl:enrolmentCapacity	xsd:nonNegativeInteger	0..*
--------------------	--------------------------------------	--	------

→ The number of learners that can register for a Learning Opportunity Instance.

enrolled learner count	<u>ql:enrolledLearnerCount</u>	xsd:nonNegativeInteger	0..*
------------------------	--	------------------------	------

→ The number of learners that are currently enrolled for the Learning Opportunity Instance.

minimum enrolment	<u>ql:enrolmentMinimum</u>	xsd:nonNegativeInteger	0..*
-------------------	--	------------------------	------

→ The number of learners that at least need to enrol for a Learning Opportunity Instance to take place.

fees	<u>elm:priceDetail</u>	<u>elm:PriceDetail</u>	0..*
------	--	--	------

→ Information about the pricing or tuition fees

grant	<u>elm:grant</u>	<u>elm:Grant</u>	0..*
-------	----------------------------------	----------------------------------	------

→ Information on grant possibilities

learning activity specification	<u>elm:learningActivitySpecification</u>	<u>elm:LearningActivitySpecification</u>	0..1
---------------------------------	--	--	------

→ Detailed information on the learning activities, including the curricula

virtual learning environment	gl:virtualLearningEnvironment	skos:Concept	0..*
------------------------------	---	------------------------------	------

→ Specifies (a) virtual learning environment(s) used in the delivery of this learning opportunity.

banner image	elm:bannerImage	elm:MediaObject	0..1
--------------	---------------------------------	---------------------------------	------

→ An image that can be used for display of this instance

last modification date	dcterms:modified	xsd:dateTime	0..1
------------------------	----------------------------------	------------------------------	------

→ The date when the learning opportunity was last modified.

4.2.4 Usage

Learning Opportunity Specification

[instance](#)

4.3 Student-staff ratio

<http://data.quality-link.eu/ontology/v1#StudentStaffRatio>

4.3.1 General description

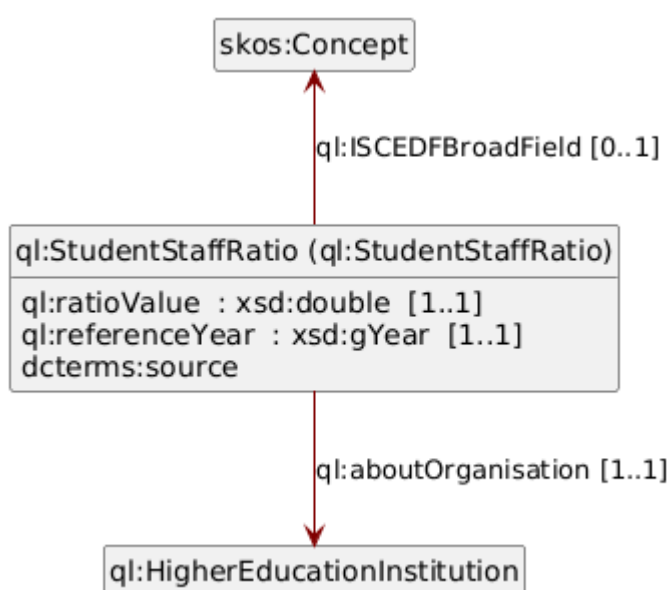
Description

Statistical information on the student-staff ratio in a given reference year, either institution-wide or related to a specified ISCED-F broad field.

Targets

- Applies to: [ql:StudentStaffRatio](#)

4.3.2 Diagram



[ql:StudentStaffRatio \(ql:StudentStaffRatio\)](#)[ql:ratioValue : xsd:double \[1..1\]](#)[ql:referenceYear : xsd:gYear \[1..1\]](#)[dcterms:source](#)[skos:Concept](#)[ql:HigherEducationInstitution](#)[ql:ISCEDFBroadField \[0..1\]](#)[ql:aboutOrganisation \[1..1\]](#)

Click diagram to navigate to corresponding section | [View as PNG](#)

4.3.3 Properties

Property name	URI	Expected value	Card.

institution	ql:aboutOrganisation	Higher Education Institution	1..1
-------------	--------------------------------------	--	------

→ Education provider the indicator describes.

thematic area (broad field)	ql:ISCEDFBroadField	skos:Concept	0..1
-----------------------------	-------------------------------------	------------------------------	------

→ ISCED-F 2013 broad field to which the student/staff ratio relates

ratio	ql:ratioValue	xsd:double	1..1
-------	-------------------------------	------------	------

→ The student-staff ratio for this institution/ISCED-F field/course.

reference year	ql:referenceYear	xsd:gYear	1..1
----------------	----------------------------------	-----------	------

→ The reference year to which this statistical indicator relates.

data source	dcterms:source	0..*
-------------	--------------------------------	------

→ Database from which this indicator was fetched.

5. Supportive Entities

5.1 Higher Education Institution

<http://data.quality-link.eu/ontology/v1#HigherEducationInstitution>

5.1.1 General description

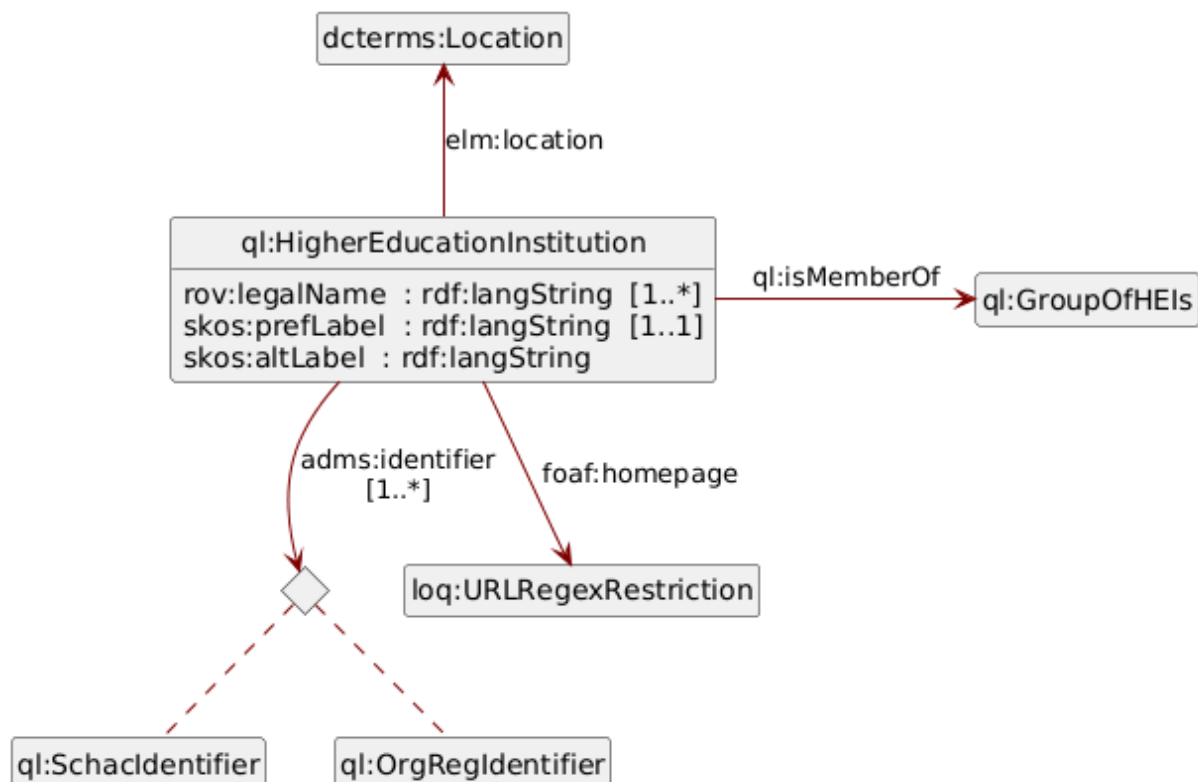
Description

An entity that has full degree awarding powers at higher education level (i.e. EQF levels 5 to 8; QF-EHEA cycle first to third) recognised by at least one national authority.

Targets

- Applies to: [ql:HigherEducationInstitution](#)

5.1.2 Diagram



[ql:HigherEducationInstitutionrov:legalName](#) : [rdf:langString](#) [1..*][skos:prefLabel](#) :
[rdf:langString](#) [1..1][skos:altLabel](#) :
[rdf:langStringql:SchacIdentifierql:OrgRegIdentifierdcterms:Locationloq:URLRegexRest](#)
[riptionql:GroupOfHEIsadms:identifier](#)[1..*][elm:locationfoaf:homepageql:isMemberOf](#)

Click diagram to navigate to corresponding section | [View as PNG](#)

5.1.3 Properties

Property name	URI	Expected value	Card.
identifier	adms:identifier	SCHAC Code or OrgReg ID	1..*
→ ORGREG or SCHAC identifier			
legal name	rov:legalName	rdf:langString	1..*
→ The legal name of the institution. It may have more than one legal name, particularly in countries with more than one official language. In such cases the language of the string should be identified.			
primary name	skos:prefLabel	rdf:langString	1..1
→ Preferred display name of the institution.			
alternative name	skos:altLabel	rdf:langString	0..*

→ Alternative names under which the institution is known, including former names.

location	elm:location	dcterms:Location	0..*
----------	------------------------------	----------------------------------	------

→ The physical sites of the institution.

homepage	foaf:homepage	URL	0..*
----------	-------------------------------	---------------------	------

→ The official website of the institution.

is member of	gl:isMemberOf	Group of Higher Education Institutions	0..*
--------------	-------------------------------	--	------

→ Specifies that an organisation is member of an alliance, e.g. a European Universities alliance, a consortium, or an association, e.g. EUA or EURASHE.

5.1.4 Usage

Learning Opportunity Specification

[publisher](#)

Learning Opportunity Instance

[provided by](#)

Group of Higher Education Institutions

[has member](#)

Learner Group

[home institutions](#)

Student-staff ratio

[institution](#)

Learning Opportunity Specification Reference

[provided by](#)

Learning Opportunity Instance Reference

[provided by](#)

5.2 Group of Higher Education Institutions

<http://data.quality-link.eu/ontology/v1#GroupOfHEIs>

5.2.1 General description

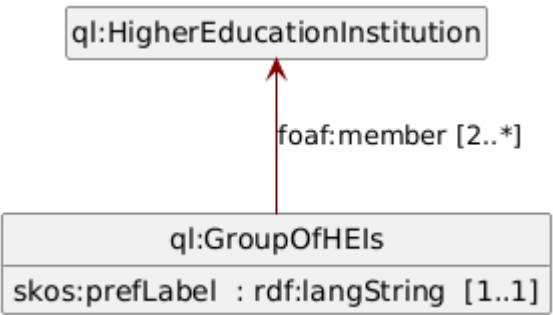
Description

A group or alliance of higher education institutions

Targets

- Applies to: [ql:GroupOfHEIs](#)

5.2.2 Diagram



[ql:GroupOfHEIsskos:prefLabel : rdf:langString \[1..1\]ql:HigherEducationInstitutionfoaf:member \[2..*\]](#)

Click diagram to navigate to corresponding section | [View as PNG](#)

5.2.3 Properties

Property name	URI	Expected value	Card.
primary name	skos:prefLabel	<code>rdf:langString</code>	1..1
→ Preferred display name of the institution.			
has member	foaf:member	Higher Education Institution	2..*

5.2.4 Usage



Learner Group

[home institutions](#)

5.3 European University Alliance

<http://data.quality-link.eu/ontology/v1#EuropeanUniversityAlliance>

5.3.1 General description

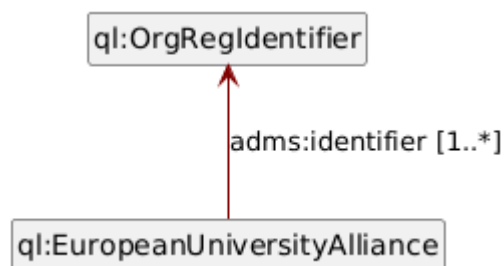
Description

An alliance of higher education institutions that is part of the EU's European Universities programme

Targets

- Applies to: [ql:EuropeanUniversityAlliance](#)
- Inherits from: [Group of Higher Education Institutions](#)

5.3.2 Diagram



[ql:EuropeanUniversityAlliance](#)[ql:OrgRegIdentifier](#)adms:identifier [1..*]

Click diagram to navigate to corresponding section | [View as PNG](#)

5.3.3 Properties

Property name	URI	Expected value	Card.
Properties from European University Alliance			
identifier	adms:identifier	OrgReg_ID	1..*
→ ORGREG identifier			
Properties from Group of Higher Education Institutions			
primary name	skos:prefLabel	rdf:langString	1..1
→ Preferred display name of the institution.			
has member	foaf:member	Higher Education Institution	2..*

5.4 Learning Outcome

<http://data.quality-link.eu/ontology/v1#LearningOutcome>

5.4.1 General description

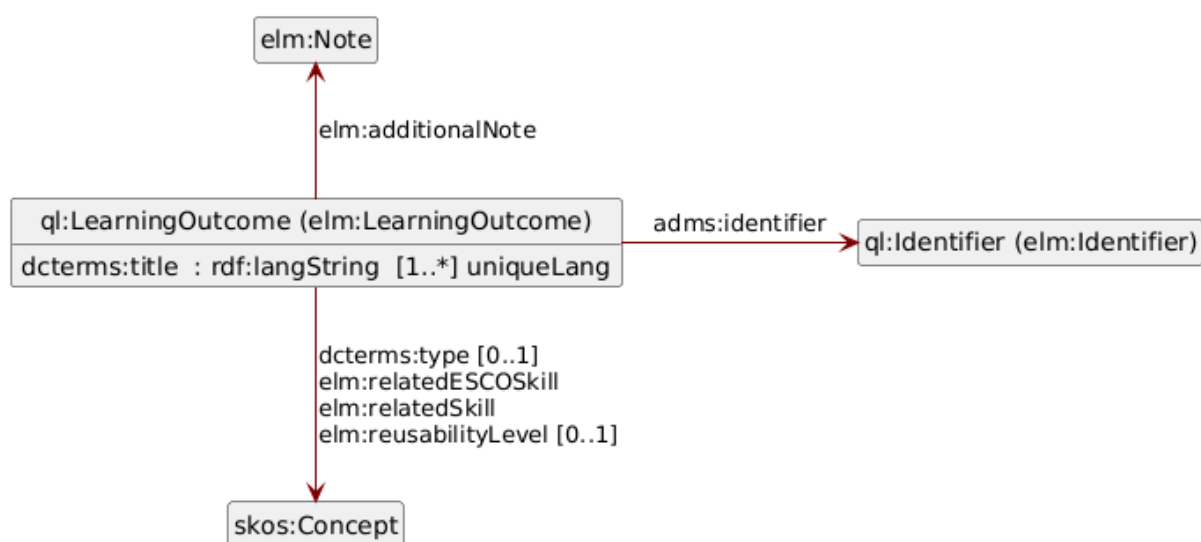
Description

A statement regarding what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and responsibility and autonomy.

Targets

- Applies to: [elm:LearningOutcome](#)

5.4.2 Diagram



[ql:LearningOutcome \(elm:LearningOutcome\)dcterms:title : rdf:langString \[1..*\] uniqueLang](#)
[elm:Noteskos:Conceptql:Identifier \(elm:Identifier\)](#)
[elm:additionalNotedcterms:type \[0..1\]](#)
[elm:relatedESCOSkillelm:relatedSkillelm:reusabilityLevel \[0..1\]](#)
[adms:identifier](#)

Click diagram to navigate to corresponding section | [View as PNG](#)

5.4.3 Properties

Property name	URI	Expected value	Card.
---------------	-----	----------------	-------

identifier	adms:identifier	Identifier	0..*
------------	---------------------------------	----------------------------	------

→ An alternative identifier of the learning outcome.

title	dcterms:title	rdf:langString	1..*
-------	-------------------------------	--------------------------------	------

→ A legible, descriptive title for the learning outcome. One value per language is permitted.

type	dcterms:type	skos:Concept	0..1
------	------------------------------	------------------------------	------

→ The learning outcome type. It should be provided using ESCO Skill Pillar concept types.

more information	elm:additionalNote	elm:Note	0..*
------------------	------------------------------------	--------------------------	------

→ An additional free text note about the learning outcome.

related ESCO skill(s)	elm:relatedESCOSkill	skos:Concept	0..*
-----------------------	--------------------------------------	------------------------------	------

→ A link to an ESCO skill. It should be provided using the ESCO skills controlled vocabulary.

related skill(s)	<u>elm:relatedSkill1</u>	<u>skos:Concept</u>	0..*
------------------	--	-------------------------------------	------

→ A link to a related skill or the level of a related skill on a skill framework (except ESCO). It should be provided using a controlled vocabulary.

reusability level	<u>elm:reusabilityLevel</u>	<u>skos:Concept</u>	0..1
-------------------	---	-------------------------------------	------

→ The reusability level. It should be provided using the ESCO Skill Pillar concept reusability levels.

5.4.4 Usage

Learning Opportunity Specification

[learning outcomesrequired learning outcome for entry](#)

5.5 Learner Group Conditions

<http://data.quality-link.eu/ontology/v1#LearnerGroupConditions>

5.5.1 General description

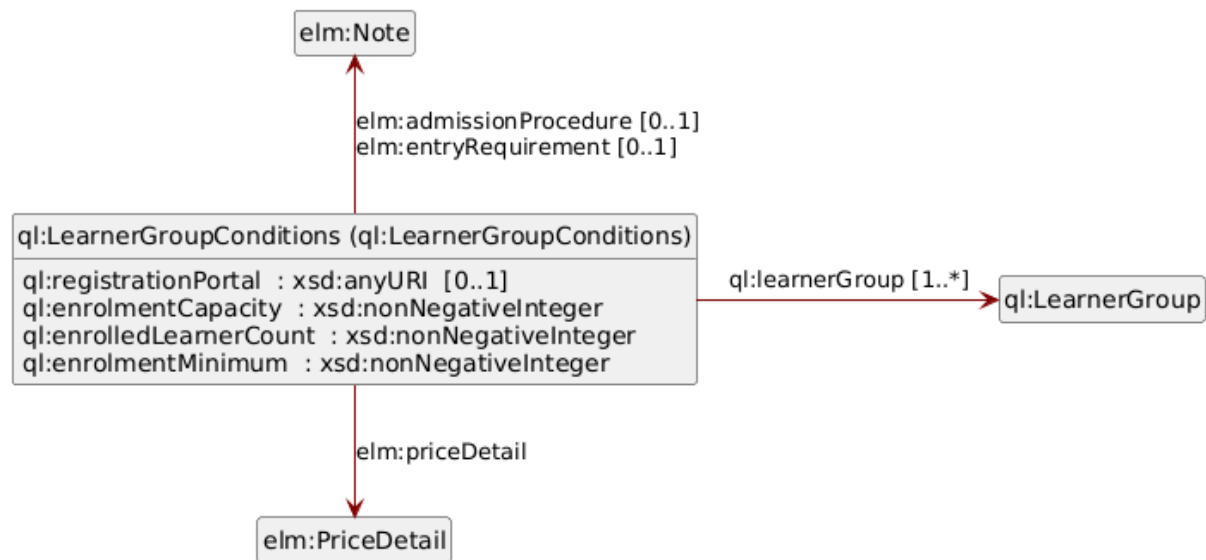
Description

Defines specific conditions for a defined target group of learners to whom a Learning Opportunity is offered, e.g. specific fees or registration portals

Targets

- Applies to: [ql:LearnerGroupConditions](#) | [ql:LearnerGroupConditions](#)

5.5.2 Diagram



[ql:LearnerGroupConditions \(ql:LearnerGroupConditions\)ql:registrationPortal : xsd:anyURI \[0..1\]ql:enrolmentCapacity : xsd:nonNegativeIntegerql:enrolledLearnerCount : xsd:nonNegativeIntegerql:enrolmentMinimum : xsd:nonNegativeIntegerelm:Noteelm:PriceDetailql:LearnerGroupelm:admissionProcedure \[0..1\]elm:entryRequirement \[0..1\]elm:priceDetailql:learnerGroup \[1..*\]](#)

Click diagram to navigate to corresponding section | [View as PNG](#)

5.5.3 Properties

Property name	URI	Expected value	Card.
learner group	ql:learnerGroup	Learner Group	1..*

→ Definition of the specific group of learners to whom these conditions apply

registration portal	<u>gl:registrationPortal</u>	xsd:anyURI	0..1
---------------------	--	------------	------

→ Link to a portal where students can register for the learning opportunity (specific for this group of learners).

admissions procedure	<u>elm:admissionProcedure</u>	<u>elm:Note</u>	0..1
----------------------	---	---------------------------------	------

→ Information on how to apply for this specific group of learners.

entry requirement	<u>elm:entryRequirement</u>	<u>elm:Note</u>	0..1
-------------------	---	---------------------------------	------

→ Entry requirement or prerequisites that apply to this specific group of learners.

enrolment capacity	<u>gl:enrolmentCapacity</u>	xsd:nonNegativeInteger	0..*
--------------------	---	------------------------	------

→ Number of learners from the specific group that can be enrolled.

enrolled learner count	<u>gl:enrolledLearnerCount</u>	xsd:nonNegativeInteger	0..*
------------------------	--	------------------------	------

→ Number of learners from the specific group that are currently enrolled.

minimum enrolment	gl:enrolmentMinimum	xsd:nonNegativeInteger	0..*
-------------------	-------------------------------------	------------------------	------

→ Number of learners from the specific group that need to at least enrol for the instance to take place.

fees	elm:priceDetail	elm:PriceDetail	0..*
------	---------------------------------	---------------------------------	------

→ Information about the pricing of the course, applicable for this specific target group.

5.5.4 Usage

Learning Opportunity Instance

[specific conditions for learner group](#)

5.6 Learner Group

<http://data.quality-link.eu/ontology/v1#LearnerGroup>

5.6.1 General description

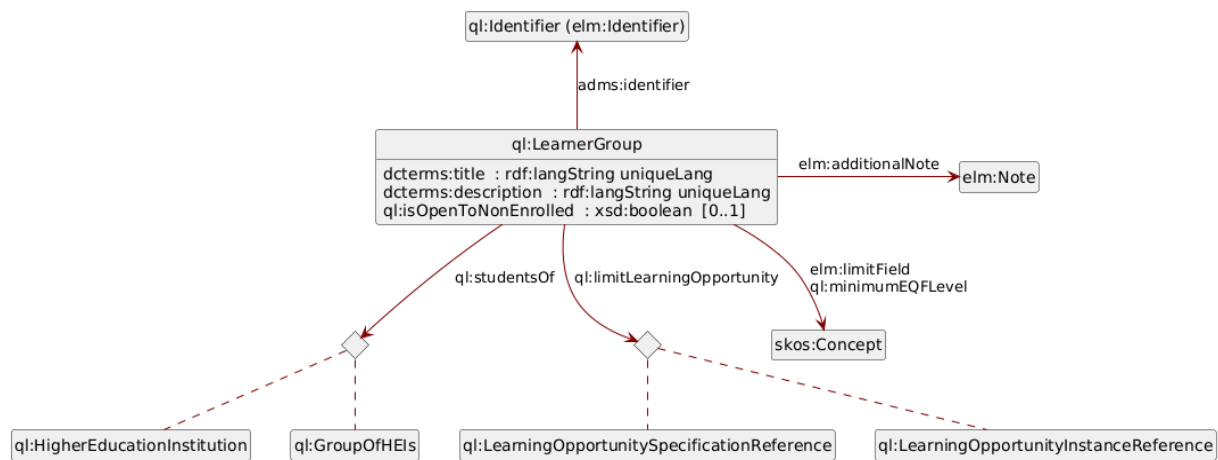
Description

Defines a target group of learners to whom a Learning Opportunity is offered, e.g. students of a specific alliance or HEI

Targets

- Applies to: [gl:LearnerGroup](#)

5.6.2 Diagram



[ql:LearnerGroup](#)
[dcterms:title : rdf:langString uniqueLang](#)
[dcterms:description : rdf:langString uniqueLang](#)
[ql:isOpenToNonEnrolled : xsd:boolean \[0..1\]](#)
[ql:HigherEducationInstitution](#)
[ql:GroupOfHEIs](#)
[ql:LearningOpportunitySpecificationReference](#)
[ql:LearningOpportunityInstanceReference](#)
[ql:Identifier \(elm:Identifier\)](#)
[skos:Concept](#)
[elm:Note](#)
[ql:studentsOf](#)
[ql:limitLearningOpportunity](#)
[adms:identifier](#)
[elm:limitField](#)
[ql:minimumEQFLevel](#)
[elm:additionalNote](#)

Click diagram to navigate to corresponding section | [View as PNG](#)

5.6.3 Properties

Property name	URI	Expected value	Card.
title	dcterms:title	<code>rdf:langString</code>	0..*
→ The title of the target group of learners.			
description	dcterms:description	<code>rdf:langString</code>	0..*

→ A free text description of the target group of learners.

identifier	<u>adms:identifier</u>	<u>Identifier</u>	0..*
------------	--	-----------------------------------	------

→ An identifier for this specific target group of learners.

open to non-enrolled learners	<u>ql:isOpenToNonEnrolled</u>	<u>xsd:boolean</u>	0..1
-------------------------------	---	------------------------------------	------

→ Defines the group as learners who are not enrolled as students

home institutions	<u>ql:studentsOf</u>	<u>Higher Education Institution</u> or <u>Group of Higher Education Institutions</u>	0..*
-------------------	--------------------------------------	--	------

→ Defines the group as students from these higher education institution(s)

specific learning opportunity	<u>ql:limitLearningOpportunity</u>	<u>Learning Opportunity Specification Reference</u> or <u>Learning Opportunity Instance Reference</u>	0..*
-------------------------------	--	---	------

→ Defines the group as students following a specific other learning opportunity

specific field	elm:limitField	skos:Concept	0..*
→ Defines the group as students from (a) specific field(s) of study; use ISCED-F controlled vocabulary			
minimum EQF Level	gl:minimumEQFLevel	skos:Concept	0..*
→ Defines the group as students enrolled in another learning opportunity at a specified EQF level or higher; use the EQF controlled vocabulary			
information note	elm:additionalNote	elm>Note	0..*
→ Additional information about the defined group of learners			

5.6.4 Usage

Learner Group Conditions

[learner group](#)

Grade Distribution

[reference group](#)

5.7 Grading Scheme

<http://data.quality-link.eu/ontology/v1#GradingSchemeSchape>

5.7.1 General description

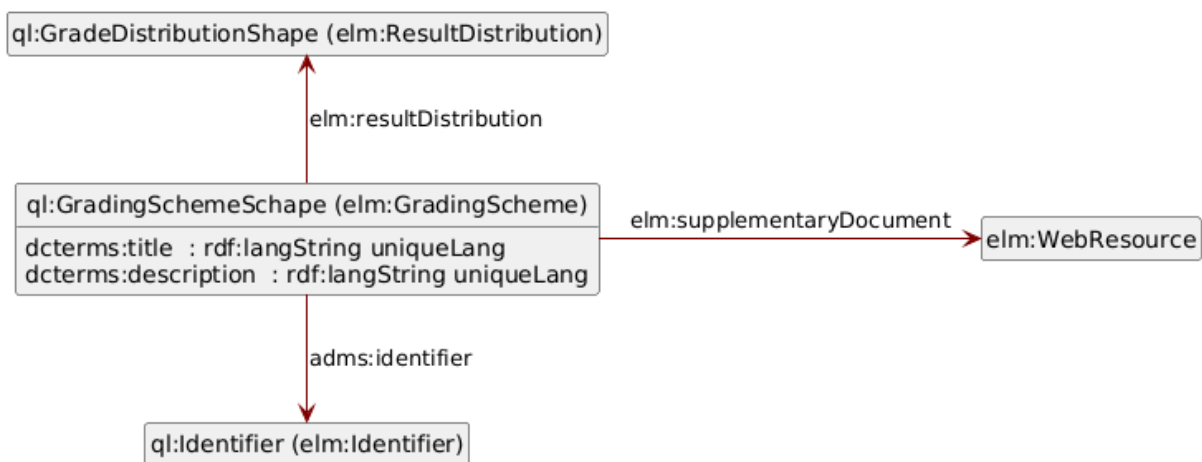
Description

Information on the grading scheme used.

Targets

- Applies to: [elm:GradingScheme](#)

5.7.2 Diagram



[ql:GradingSchemeShape \(elm:GradingScheme\)](#)
[dcterms:title : rdf:langString uniqueLang](#)
[dcterms:description : rdf:langString uniqueLang](#)
[ql:GradeDistributionShape \(elm:ResultDistribution\)](#)
[ql:Identifier \(elm:Identifier\)](#)
[elm:WebResource](#)
[elm:resultDistribution](#)
[adms:identifier](#)
[elm:supplementaryDocument](#)

Click diagram to navigate to corresponding section | [View as PNG](#)

5.7.3 Properties

Property name	URI	Expected value	Card.
---------------	-----	----------------	-------

identifier	adms:identifier	Identifier	0..*
→ An identifier of the grading scheme.			
title	dcterms:title	rdf:langString	0..*
→ The title of the grading scheme. One value per language is permitted.			
description	dcterms:description	rdf:langString	0..*
→ A free text description of the grading scheme.			
other documents	elm:supplementaryDocument	elm:WebResource	0..*
→ A public web document containing additional documentation about the grading scheme.			
grade distribution	elm:resultDistribution	Grade Distribution	0..*
→ Information on the statistical distribution of grades in the scheme.			

5.7.4 Usage

Learning Opportunity Specification

[grading scheme](#)

5.8 Grade Distribution

<http://data.quality-link.eu/ontology/v1#GradeDistributionShape>

5.8.1 General description

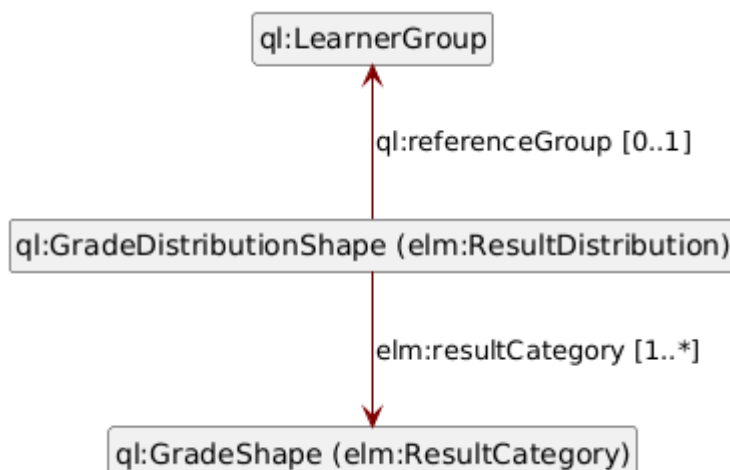
Description

It describes a histogram of grades achieved by learners within a specific reference group.

Targets

- Applies to: [elm:ResultDistribution](#)

5.8.2 Diagram



[ql:GradeDistributionShape \(elm:ResultDistribution\)ql:LearnerGroupql:GradeShape \(elm:ResultCategory\)ql:referenceGroup \[0..1\]elm:resultCategory \[1..*\]](#)

Click diagram to navigate to corresponding section | [View as PNG](#)

5.8.3 Properties

Property name	URI	Expected value	Card.
reference group	gl:referenceGroup	Learner Group	0..1
→ The group of learners for which the histogram of results was established.			
grade	elm:resultCategory	Grade	1..*

→ One specific grade in the grading scheme with the distribution information.

5.8.4 Usage

Grading Scheme

[grade distribution](#)

5.9 Grade

<http://data.quality-link.eu/ontology/v1#GradeShape>

5.9.1 General description

Description

Description of a single grade within a histogram of results.

Targets

- Applies to: [elm:ResultCategory](#)

5.9.2 Properties

Property name	URI	Expected value	Card.
label	elm:label	<code>xsd:string</code>	1..1
→ The label of the grade according to the grading scheme it is part of, e.g. 'C', '2+' or '10'.			
order	gl:gradeOrder	<code>xsd:positiveInteger</code>	1..1
→ A number specifying the order of the grade within the grading scheme, the highest number indicating the best grade.			
percentage	gl:gradePercentage	<code>xsd:positiveInteger</code>	1..1

→ The percentage of learners earning this grade.

5.9.3 Usage

Grade Distribution

[grade](#)

5.10 Identifier

<http://data.quality-link.eu/ontology/v1#Identifier>

5.10.1 General description

Description

A character string that identifies a course or another unique object.

Targets

- Applies to: [elm:Identifier](#)

5.10.2 Properties

Property name	URI	Expected value	Card.
scheme name	elm:schemeName	<code>xsd:string</code>	0..1
→ The name of the identifier scheme.			
schema agency	adms:schemeAgency	<code>rdf:langString</code>	0..1
→ The name of the agency that issued the identifier.			
notation	skos:notation	<code>Literal</code>	1..1

creator	dcterms:creator	IRI	0..1
→ An entity responsible for assigning the identifier.			
scheme ID	elm:schemeId	xsd:anyURI	0..1
→ Identification of the identifier scheme.			
date issued	dcterms:issued	xsd:dateTime	0..1
→ Date of formal issuance of the identifier.			
scheme version	elm:schemeVersion	xsd:string	0..1
→ Identification of the version of the identifier scheme.			

5.10.3 Usage

Learning Opportunity Specification

[identifier](#)

Learning Opportunity Instance

[identifier](#)

Learning Outcome

[identifier](#)

Learner Group

[identifier](#)

Grading Scheme

[identifier](#)

Learning Opportunity Specification Reference

[\(local\) identifier](#)

Learning Opportunity Instance Reference

[\(local\) identifier](#)

5.11 OrgReg ID

<http://data.quality-link.eu/ontology/v1#OrgRegIdentifier>

5.11.1 General description

Description

The identifier assigned to a higher education institution or other organisation in the Register of Public Sector Organisations (OrgReg)

Targets

- Applies to: [ql:OrgRegIdentifier](#)

5.11.2 Properties

Property name	URI	Expected value	Card.
scheme ID	elm:schemeId	gl:OrgReg	1..1
→ Identification of the scheme.			
identifier	skos:notation	Literal ^(INT [A-Z]{2})[0-9]{4}\$	1..1
→ The OrgReg identifier of the format XX1111.			
scheme name	elm:schemeName	xsd:string	0..1

→ The name of the identifier scheme.

5.11.3 Usage

Higher Education Institution

[identifier](#)

European University Alliance

[identifier](#)

5.12 SCHAC Code

<http://data.quality-link.eu/ontology/v1#SchacIdentifier>

5.12.1 General description

Description

The SCHAC code (schacHomeOrganization) is a domain name used to identify a higher education institution.

Targets

- Applies to: [gl:SchacIdentifier](#)

5.12.2 Properties

Property name	URI	Expected value	Card.
scheme ID	elm:schemeId	gl:Schac	1..1
→ Identification of the scheme.			
identifier	skos:notation	Literal	1..1
→ The SCHAC (schacHomeOrganisation) identifier. Must be a valid DNS domain name.			
scheme name	elm:schemeName	xsd:string	0..1

→ The name of the identifier scheme.

5.12.3 Usage

Higher Education Institution

identifier

5.13 URL

`http://data.europa.eu/snb/model/application-profile/log-constraints/
URLRegexRestriction`

5.13.1 General description

Description

This shape does not apply on a class. This shape is for checking if the value of `contentUrl` is well formed.

5.13.2 Properties

Property name	URI	Expected value	Card.
content URL, contentURL	<u><code>elm:contentUrl</code></u>		0..*

→ The public access URL for the subsidy, awarded financially or in-kind, which does not require repayment., The public access URL.

5.13.3 Usage

Higher Education Institution

[homepage](#)

Learning Opportunity Instance

[homepage](#)[other documents](#)

5.14 Learning Opportunity Specification Reference

<http://data.quality-link.eu/ontology/v1#LearningOpportunitySpecificationReference>

5.14.1 General description

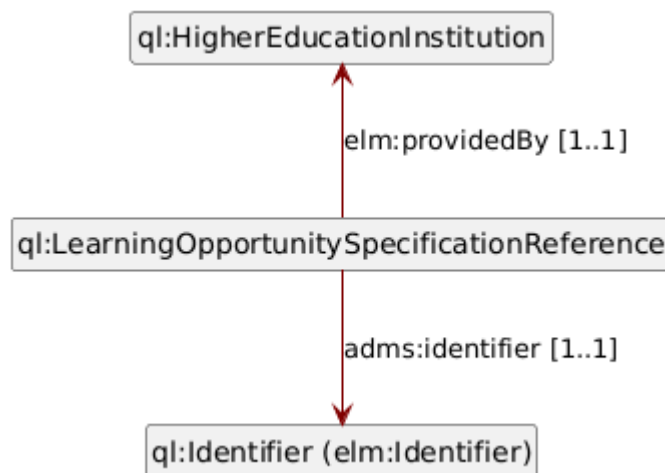
Description

A reference to another Learning Opportunity specification, identified by a provider and a (local) identifier, without further details.

Targets

- Applies to: [ql:LearningOpportunitySpecificationReference](#)

5.14.2 Diagram



[ql:LearningOpportunitySpecificationReference](#)[ql:HigherEducationInstitution](#)[ql:Identifier \(elm:Identifier\)](#)
[elm:providedBy \[1..1\]](#)[adms:identifier \[1..1\]](#)

Click diagram to navigate to corresponding section | [View as PNG](#)

5.14.3 Properties

Property name	URI	Expected value	Card.
provided by	elm:providedBy	Higher Education Institution	1..1
→ Higher Education Institution that offers the LO.			
(local) identifier	adms:identifier	Identifier	1..1

→ Identifier of the Learning Opportunity Specification. Must be unique within the scope of the institution identified with providedBy.

5.14.4 Usage

Learning Opportunity Specification

required learning opportunity for entrysupersededis part
ofhas partspecialisation of

Learner Group

specific learning opportunity

5.15 Learning Opportunity Instance Reference

<http://data.quality-link.eu/ontology/v1#LearningOpportunityInstanceReference>

5.15.1 General description

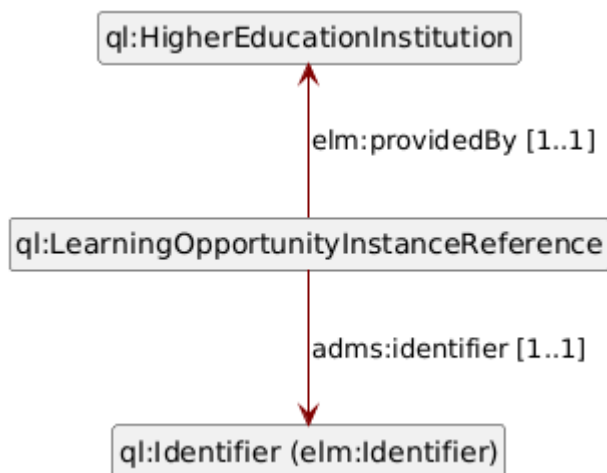
Description

A reference to another Learning Opportunity Instance, identified by a provider and a (local) identifier, without further details.

Targets

- Applies to: [ql:LearningOpportunityInstanceReference](#)

5.15.2 Diagram



[ql:LearningOpportunityInstanceReference](#)[ql:HigherEducationInstitution](#)[ql:Identifier \(elm:Identifier\)](#)
[elm:providedBy \[1..1\]](#)[adms:identifier \[1..1\]](#)

Click diagram to navigate to corresponding section | [View as PNG](#)

5.15.3 Properties

Property name	URI	Expected value	Card.
provided by	elm:providedBy	Higher Education Institution	1..1
→ Higher Education Institution that offers the LO.			
(local) identifier	adms:identifier	Identifier	1..1

→ Identifier of the Learning Opportunity instance. Must be unique within the scope of the institution identified with providedBy.

5.15.4 Usage

Learner Group

specific learning opportunity



QualityLink DESM Shared Mappings

<https://mappings.skilldata.info/mappings-list?abstractClass=Learning+Opportunity+Specification&cp=4>

Learning Opportunity Specification

Property name

EQF level

keyboard_arrow_up

Definition

The qualification level as specified by a European Qualification Framework. It should be provided using the EQF QDR List of qualification frameworks.

Identicalhelp

account_treeELM (3.2)

arrow_splitEQF level

Definition: The qualification level as specified by a European Qualification Framework. It should be provided using the EQF QDR List of qualification frameworks.

Relevant class(es): elm:Qualification

Expected value type: skos:Concept

Rewordedhelp

account_treeOOAPI - program (v5)

arrow_splitlevel

Definition: None

Relevant class(es):

Expected value type:

Property name

NQF level

keyboard_arrow_up

Definition

The qualification level as specified by a National Qualification Framework. It is recommended to use the QDR List of qualification frameworks.

Similarhelp

account_treeOOAPI - course (v5)
arrow_splitlevel

Definition: None

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)
arrow_splitNQF level

Definition: The qualification level as specified by a National Qualification Framework. It is recommended to use the QDR List of qualification frameworks.

Relevant class(es): elm:Qualification

Expected value type: skos:Concept

Rewordedhelp

account_treeOOAPI - program (v5)
arrow_splitlevelOfQualification

Definition: None

Relevant class(es):

Expected value type:

Property name

accreditation

keyboard_arrow_up
Definition

The associated accreditation.

Concepthelp

account_treeOOAPI - program (v5)
arrow_splitorganization

Definition: The organization that manages this group.

[`expandable`](#tag/organization_model) By default only the `organizationId` (a string) is returned. If the client requested an expansion of `organization` the full organization object should be returned.

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitaccreditation

Definition: The associated accreditation.

Relevant class(es): elm:Qualification

Expected value type: elm:Accreditation

Property name

addresses

keyboard_arrow_up

Definition

Addresses for this course

Identicalhelp

account_treeOOAPI - course (v5)

arrow_splitaddresses

Definition: Addresses for this course

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeOOAPI - program (v5)

arrow_splitaddresses

Definition: Addresses for this course

Relevant class(es):

Expected value type: array

Property name

alternative name

keyboard_arrow_up

Definition

The alternative name of the learning achievement specification.

Identicalhelp

account_treeELM (3.2)
arrow_splitalternative name

Definition: The alternative name of the learning achievement specification.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: rdf:langString

Similarhelp

account_treeOOAPI - program (v5)
arrow_splitabbreviation

Definition: The abbreviation or internal code used to identify this course (ECTS-code)

Relevant class(es):

Expected value type: string

Similarhelp

account_treeOOAPI - program (v5)
arrow_splitotherCodes

Definition: An array of additional human readable codes/identifiers for the entity being described.

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - course (v5)
arrow_splitabbreviation

Definition: The abbreviation or internal code used to identify this course (ECTS-code)

Relevant class(es):

Expected value type: string

Similarhelp

account_treeOOAPI - course (v5)
arrow_splitotherCodes

Definition: An array of additional human readable codes/identifiers for the entity being described.

Relevant class(es):

Expected value type: array

Property name

awarding information

keyboard_arrow_up

Definition

Refers to an activity related to the awarding of the learning specification, such as the country or region where the qualification is awarded, the awarding body and optionally the awarding period now or in the past.

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitqualificationRequirements

Definition: Normally, students will receive a diploma when they have completed the (official) study program and have obtained the required number of credits. If there are any other specific requirements that students need to have fulfilled, mention them here.

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - course (v5)

arrow_splitqualificationRequirements

Definition: Normally, students will receive a diploma when they have completed the (official) study program and have obtained the required number of credits. If there are any other specific requirements that students need to have fulfilled, mention them here.

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)

arrow_splitawarding information

Definition: Refers to an activity related to the awarding of the learning specification, such as the country or region where the qualification is awarded, the awarding body and

optionally the awarding period now or in the past.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: elm:AwardingOpportunity

Property name

category

keyboard_arrow_up

Definition

The category of the learning achievement specification provided as a string.

Identicalhelp

account_treeELM (3.2)

arrow_splitcategory

Definition: The category of the learning achievement specification provided as a string.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: rdf:langString

Disaggregatedhelp

account_treeOOAPI - program (v5)

arrow_splitconsumers

Definition: The additional consumer elements that can be provided, see the [documentation on support for specific consumers](<https://open-education-api.github.io/specification/#/consumers>) for more information about this mechanism.

Relevant class(es):

Expected value type: array

Disaggregatedhelp

account_treeOOAPI - course (v5)

arrow_splitconsumers

Definition: The additional consumer elements that can be provided, see the [documentation on support for specific consumers](<https://open-education-api.github.io/specification/#/consumers>) for more information about this mechanism.

Relevant class(es):

Expected value type: array

Property name

coordinators

keyboard_arrow_up

Definition

The person(s) responsible for this course. This object is
[`expandable`](#tag/person_model)

Identicalhelp

account_treeOOAPI - course (v5)

arrow_splitcoordinators

Definition: The person(s) responsible for this course. This object is
[`expandable`](#tag/person_model)

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeOOAPI - program (v5)

arrow_splitcoordinators

Definition: The person(s) responsible for this course. This object is
[`expandable`](#tag/person_model)

Relevant class(es):

Expected value type: array

Property name

credit points

keyboard_arrow_up

Definition

The credit points assigned to the learning achievement specification, following an educational credit system.

Identicalhelp

account_treeELM (3.2)

arrow_splitcredit points

Definition: The credit points assigned to the learning achievement specification, following an educational credit system.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: elm:CreditPoint

Disaggregatedhelp

account_treeOOAPI - course (v5)

arrow_splitstudyLoad

Definition: None

Relevant class(es):

Expected value type:

Disaggregatedhelp

account_treeOOAPI - program (v5)

arrow_splitstudyLoad

Definition: None

Relevant class(es):

Expected value type:

Property name

description

keyboard_arrow_up

Definition

A free text description of the learning opportunity. One value per language is permitted.

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitdescription

Definition: The description of this course (ECTS-description).

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - course (v5)

arrow_splitdescription

Definition: The description of this course (ECTS-description).

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)

arrow_splitdescription

Definition: A free text description of the learning opportunity. One value per language is permitted.

Relevant class(es):

Expected value type: rdf:langString

Property name

education level

keyboard_arrow_up

Definition

An associated level of education within a semantic framework describing education levels.

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitlevelOfQualification

Definition: None

Relevant class(es):

Expected value type:

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitsector

Definition: None

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_spliteducation level

Definition: An associated level of education within a semantic framework describing education levels.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: skos:Concept

Similarhelp

account_treeOOAPI - course (v5)

arrow_splitlevel

Definition: None

Relevant class(es):

Expected value type:

Property name

education subject

keyboard_arrow_up

Definition

An associated field of education from another semantic framework than the ISCED classification.

Identicalhelp

account_treeELM (3.2)

arrow_spliteducation subject

Definition: An associated field of education from another semantic framework than the ISCED classification.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: skos:Concept

Disaggregatedhelp

account_treeOOAPI - course (v5)

arrow_splitconsumers

Definition: The additional consumer elements that can be provided, see the [documentation on support for specific consumers](<https://open-education-api.github.io/specification/#/consumers>) for more information about this mechanism.

Relevant class(es):

Expected value type: array

Disaggregatedhelp

account_treeOOAPI - program (v5)
arrow_splitconsumers

Definition: The additional consumer elements that can be provided, see the [documentation on support for specific consumers](https://open-education-api.github.io/specification/#/consumers) for more information about this mechanism.

Relevant class(es):

Expected value type: array

Property name

entitles to

keyboard_arrow_up
Definition

Rights (such as which the person may acquire as a result of acquiring the learning outcomes).

Similarhelp

account_treeOOAPI - program (v5)
arrow_splitqualificationAwarded

Definition: None

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)
arrow_splitentitles to

Definition: Rights (such as which the person may acquire as a result of acquiring the learning outcomes).

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: elm:LearningEntitlementSpecification

Property name

entry requirement

keyboard_arrow_up
Definition

Specific entry requirement or prerequisite of individuals for which this specification is designed to start this learning opportunity.

Aggregatedhelp

account_treeOOAPI - program (v5)
arrow_splitenrollment

Definition: The extra information that is provided for enrollment

Relevant class(es):

Expected value type: array

Aggregatedhelp

account_treeOOAPI - program (v5)
arrow_splitadmissionRequirements

Definition: This information may be given at an institutional level and/or at the level of individual programmes. Make sure that it is clear whether the information applies to fee-paying students (national and/or international) or to exchange students.

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)
arrow_splitentry requirement

Definition: Specific entry requirement or prerequisite of individuals for which this specification is designed to start this learning opportunity.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: elm:Note

Aggregatedhelp

account_treeOOAPI - course (v5)
arrow_splitenrollment

Definition: The extra information that is provided for enrollment

Relevant class(es):

Expected value type: array

Aggregatedhelp

account_treeOOAPI - course (v5)
arrow_splitadmissionRequirements

Definition: This information may be given at an institutional level and/or at the level of individual programmes. Make sure that it is clear whether the information applies to fee-paying students (national and/or international) or to exchange students.

Relevant class(es):

Expected value type: array

Property name

firstStartDate

keyboard_arrow_up

Definition

The date when participants can follow this course for the first time.

Identicalhelp

account_treeOOAPI - course (v5)
arrow_splitfirstStartDate

Definition: The date when participants can follow this course for the first time.

Relevant class(es):

Expected value type: string

Identicalhelp

account_treeOOAPI - program (v5)
arrow_splitfirstStartDate

Definition: The date when participants can follow this course for the first time.

Relevant class(es):

Expected value type: string

Property name

generalisation of

keyboard_arrow_up

Definition

A learning achievement specification (e.g., a standard) of which this specification is a generalisation.

Similarhelp

account_treeOOAPI - program (v5)
arrow_spliteducationSpecification

Definition: The educationSpecification of which this course is a more concrete implementation. [`expandable``](#tag/education_specification_model)

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)
arrow_splitgeneralisation of

Definition: A learning achievement specification (e.g., a standard) of which this specification is a generalisation.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type:

Similarhelp

account_treeOOAPI - course (v5)
arrow_spliteducationSpecification

Definition: The educationSpecification of which this course is a more concrete implementation. [`expandable``](#tag/education_specification_model)

Relevant class(es):

Expected value type:

Property name

has part

keyboard_arrow_up
Definition

A learning opportunity can be composed of other learning opportunities, which when combined make up this larger learning opportunity.

Identicalhelp

account_treeELM (3.2)
arrow_splithas part

Definition: A learning opportunity can be composed of other learning opportunities, which when combined make up this larger learning opportunity.

Relevant class(es):**Expected value type:** elm:LearningOpportunity

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitchildren

Definition: Programs which are a part of this program (e.g specializations). This object is [`expandable`](#tag/program_model)**Relevant class(es):****Expected value type:** array

Property name

homepage

keyboard_arrow_up

Definition

The homepage.

Identicalhelp

account_treeOOAPI - program (v5)

arrow_splitlink

Definition: URL of the course's website**Relevant class(es):****Expected value type:** string

Identicalhelp

account_treeELM (3.2)

arrow_splithomepage

Definition: The homepage.**Relevant class(es):****Expected value type:** elm:WebResource

Identicalhelp

account_treeOOAPI - course (v5)

arrow_splitlink

Definition: URL of the course's website

Relevant class(es):

Expected value type: string

Property name

identifier

keyboard_arrow_up

Definition

An alternative Identifier of the Learning Opportunity.

Identicalhelp

account_treeELM (3.2)

arrow_splitidentifier

Definition: An alternative Identifier of the Learning Opportunity.

Relevant class(es):

Expected value type:

Similarhelp

account_treeOOAPI - course (v5)

arrow_splitcourseId

Definition: Unique id of this course

Relevant class(es):

Expected value type: string

Similarhelp

account_treeOOAPI - course (v5)

arrow_splitprimaryCode

Definition: The primary human readable identifier for this course. This is often the source identifier as defined by the institution.

Relevant class(es):

Expected value type:

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitprogramId

Definition: Unique id for this program

Relevant class(es):

Expected value type: string

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitprimaryCode

Definition: The primary human readable identifier for this course. This is often the source identifier as defined by the institution.

Relevant class(es):

Expected value type:

Property name

influenced by

keyboard_arrow_up

Definition

Activities that a person can perform to acquire the expected learning outcomes.

Identicalhelp

account_treeELM (3.2)

arrow_splitinfluenced by

Definition: Activities that a person can perform to acquire the expected learning outcomes.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: elm:LearningActivitySpecification

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitresources

Definition: An overview of the literature and other resources that is used in this course (ECTS-recommended reading and other sources)

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - course (v5)

arrow_splitresources

Definition: An overview of the literature and other resources that is used in this course (ECTS-recommended reading and other sources)

Relevant class(es):

Expected value type: array

Property name

is part of

keyboard_arrow_up

Definition

A learning opportunity can be part of other learning opportunity.

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitparent

Definition: Parent program of which the current program is a child. This object is [`expandable``](#tag/program_model)

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitis part of

Definition: A learning opportunity can be part of other learning opportunity.

Relevant class(es):

Expected value type: elm:LearningOpportunity

Similarhelp

account_treeOOAPI - course (v5)

arrow_splitprograms

Definition: The program of which this course is a part of. This object is [`expandable``](#tag/program_model)

Relevant class(es):

Expected value type: array

Property name

language

keyboard_arrow_up

Definition

The language of the learning achievement specification. It should be provided using the Language Named Authority List.

Identicalhelp

account_treeELM (3.2)

arrow_splitlanguage

Definition: The language of the learning achievement specification. It should be provided using the Language Named Authority List.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: skos:Concept

Similarhelp

account_treeOOAPI - course (v5)

arrow_splitteachingLanguage

Definition: The (primary) teaching language in which this course is given, should be a three-letter language code as specified by ISO 639-2.

Relevant class(es):

Expected value type: string

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitteachingLanguage

Definition: The (primary) teaching language in which this course is given, should be a three-letter language code as specified by ISO 639-2.

Relevant class(es):

Expected value type: string

Property name

last modification date

keyboard_arrow_up

Definition

The date when the learning opportunity was last modified.

Identicalhelp

account_treeELM (3.2)
arrow_splitlast modification date

Definition: The date when the learning opportunity was last modified.

Relevant class(es):

Expected value type: xsd:dateTime

Property name

learning outcome

keyboard_arrow_up
Definition

An individual (expected) learning outcome of the learning specification.

Aggregatedhelp

account_treeOOAPI - course (v5)
arrow_splitlearningOutcomes

Definition: Statements that describe the knowledge or skills students should acquire by the end of a particular course (ECTS-learningoutcome).

Relevant class(es):

Expected value type: array

Aggregatedhelp

account_treeOOAPI - program (v5)
arrow_splitlearningOutcomes

Definition: Statements that describe the knowledge or skills students should acquire by the end of a particular course (ECTS-learningoutcome).

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)
arrow_splitlearning outcome

Definition: An individual (expected) learning outcome of the learning specification.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: elm:LearningOutcome

Property name

learning outcome summary

keyboard_arrow_up

Definition

The full learning outcome summary of the learning achievement specification.

Concepthelp

account_treeOOAPI - program (v5)

arrow_splitlearningOutcomes

Definition: Statements that describe the knowledge or skills students should acquire by the end of a particular course (ECTS-learningoutcome).

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)

arrow_splitlearning outcome summary

Definition: The full learning outcome summary of the learning achievement specification.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: elm:Note

Concepthelp

account_treeOOAPI - course (v5)

arrow_splitlearningOutcomes

Definition: Statements that describe the knowledge or skills students should acquire by the end of a particular course (ECTS-learningoutcome).

Relevant class(es):

Expected value type: array

Property name

learning setting

keyboard_arrow_up

Definition

The type of learning setting (formal, non-formal). It should be provided using the EDC Controlled List of Learning Setting Types.

Similarhelp

account_treeOOAPI - program (v5)
arrow_splitmodeOfDelivery

Definition: None

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)
arrow_splitlearning setting

Definition: The type of learning setting (formal, non-formal). It should be provided using the EDC Controlled List of Learning Setting Types.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: skos:Concept

Similarhelp

account_treeOOAPI - course (v5)
arrow_splitmodeOfDelivery

Definition: None

Relevant class(es):

Expected value type:

Property name

maximum duration

keyboard_arrow_up
Definition

The maximum duration (in months) that a person may use to complete the learning opportunity for which this learning achievement specification is designed.

Similarhelp

account_treeOOAPI - course (v5)
arrow_splitduration

Definition: The duration of this course. The duration format is from the ISO 8601 ABNF as given in Appendix A of RFC 3339.

Relevant class(es):**Expected value type:** string

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitduration

Definition: The duration of this course. The duration format is from the ISO 8601 ABNF as given in Appendix A of RFC 3339.

Relevant class(es):**Expected value type:** string

Identicalhelp

account_treeELM (3.2)

arrow_splitmaximum duration

Definition: The maximum duration (in months) that a person may use to complete the learning opportunity for which this learning achievement specification is designed.

Relevant class(es): elm:LearningAchievementSpecification**Expected value type:** xsd:duration

Property name

mode

keyboard_arrow_up

Definition

The mode of learning Opportunity. It should be provided using the EDC Controlled List of Modes Of Learning and Assessment.

Similarhelp

account_treeOOAPI - course (v5)

arrow_splitmodeOfDelivery

Definition: None**Relevant class(es):****Expected value type:**

Identicalhelp

account_treeELM (3.2)

arrow_splitmode

Definition: The mode of learning Opportunity. It should be provided using the EDC Controlled List of Modes Of Learning and Assessment.

Relevant class(es):

Expected value type: skos:Concept

Aggregatedhelp

account_treeOOAPI - program (v5)

arrow_splitmodeOfDelivery

Definition: None

Relevant class(es):

Expected value type:

Aggregatedhelp

account_treeOOAPI - program (v5)

arrow_splitmodeOfStudy

Definition: None

Relevant class(es):

Expected value type:

Property name

more information

keyboard_arrow_up

Definition

An additional free text note about the Learning Opportunity.

Identicalhelp

account_treeELM (3.2)

arrow_splitmore information

Definition: An additional free text note about the Learning Opportunity.

Relevant class(es):

Expected value type: elm:Note

Property name

other documents

keyboard_arrow_up

Definition

A public web document containing additional documentation about the Learning Opportunity.

Identicalhelp

account_treeELM (3.2)
arrow_splitother documents

Definition: A public web document containing additional documentation about the Learning Opportunity.

Relevant class(es):

Expected value type: elm:WebResource

Property name

partial qualification

keyboard_arrow_up

Definition

Indicates whether a qualification is a full qualification or part of another qualification.

Identicalhelp

account_treeELM (3.2)
arrow_splitpartial qualification

Definition: Indicates whether a qualification is a full qualification or part of another qualification.

Relevant class(es): elm:Qualification

Expected value type: xsd:boolean

Property name

proven by

keyboard_arrow_up

Definition

Assessments a person can undergo to prove the acquisition of the learning outcomes.

Identicalhelp

account_treeELM (3.2)
arrow_splitproven by

Definition: Assessments a person can undergo to prove the acquisition of the learning outcomes.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: elm:LearningAssessmentSpecification

Concepthelp

account_treeOOAPI - course (v5)

arrow_splitassessment

Definition: A description of the way exams for this course are taken (ECTS-assessment method and criteria).

Relevant class(es):

Expected value type: array

Concepthelp

account_treeOOAPI - program (v5)

arrow_splitassessment

Definition: A description of the way exams for this course are taken (ECTS-assessment method and criteria).

Relevant class(es):

Expected value type: array

Property name

publisher

keyboard_arrow_up

Definition

The publisher of the Learning Opportunity.

Similarhelp

account_treeOOAPI - course (v5)

arrow_splitorganization

Definition: The organization that manages this group.

[`expandable`](#tag/organization_model) By default only the `organizationId` (a string) is returned. If the client requested an expansion of `organization` the full organization object should be returned.

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitpublisher

Definition: The publisher of the Learning Opportunity.

Relevant class(es):

Expected value type:

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitorganization

Definition: The organization that manages this group.

[`expandable`](#tag/organization_model) By default only the `organizationId` (a string) is returned. If the client requested an expansion of `organization` the full organization object should be returned.

Relevant class(es):

Expected value type:

Property name

qualification code

keyboard_arrow_up

Definition

An identifying code from a qualification-based reference semantic asset. This property is used to classify the qualification information with a qualification from a known qualification framework. (e.g., the link to the accredited NQF qualification).

Identicalhelp

account_treeELM (3.2)

arrow_splitqualification code

Definition: An identifying code from a qualification-based reference semantic asset. This property is used to classify the qualification information with a qualification from a known qualification framework. (e.g., the link to the accredited NQF qualification).

Relevant class(es): elm:Qualification

Expected value type: skos:Concept

Disaggregatedhelp

account_treeOOAPI - program (v5)
arrow_splitlevelOfQualification

Definition: None

Relevant class(es):

Expected value type:

Similarhelp

account_treeOOAPI - course (v5)
arrow_splitlevel

Definition: None

Relevant class(es):

Expected value type:

Property name

specialisation of

keyboard_arrow_up

Definition

A learning achievement specification (e.g., a standard) of which this specification is a specialisation.

Identicalhelp

account_treeELM (3.2)
arrow_splitspecialisation of

Definition: A learning achievement specification (e.g., a standard) of which this specification is a specialisation.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type:

Similarhelp

account_treeOOAPI - course (v5)
arrow_spliteducationSpecification

Definition: The educationSpecification of which this course is a more concrete implementation. [`expandable``](#tag/education_specification_model)

Relevant class(es):

Expected value type:

Similarhelp

account_treeOOAPI - program (v5)

arrow_spliteducationSpecification

Definition: The educationSpecification of which this course is a more concrete implementation. [`expandable``](#tag/education_specification_model)

Relevant class(es):

Expected value type:

Property name

status

keyboard_arrow_up

Definition

The publication status of the learning opportunity.

Identicalhelp

account_treeELM (3.2)

arrow_splitstatus

Definition: The publication status of the learning opportunity.

Relevant class(es):

Expected value type: xsd:string

Property name

target group

keyboard_arrow_up

Definition

A specific target group or category for which this specification is designed. It should be provided using the EDC Controlled List of Target Groups.

Identicalhelp

account_treeELM (3.2)

arrow_splittarget group

Definition: A specific target group or category for which this specification is designed. It should be provided using the EDC Controlled List of Target Groups.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: skos:Concept

Disaggregatedhelp

account_treeOOAPI - program (v5)
arrow_splitconsumers

Definition: The additional consumer elements that can be provided, see the [documentation on support for specific consumers](https://open-education-api.github.io/specification/#/consumers) for more information about this mechanism.

Relevant class(es):

Expected value type: array

Disaggregatedhelp

account_treeOOAPI - course (v5)
arrow_splitconsumers

Definition: The additional consumer elements that can be provided, see the [documentation on support for specific consumers](https://open-education-api.github.io/specification/#/consumers) for more information about this mechanism.

Relevant class(es):

Expected value type: array

Property name

thematic area

keyboard_arrow_up

Definition

The thematic area according to the ISCED-F 2013 Classification. It should be provided using the ISCEDF controlled vocabulary.

Identicalhelp

account_treeELM (3.2)
arrow_splitthematic area

Definition: The thematic area according to the ISCED-F 2013 Classification. It should be provided using the ISCEDF controlled vocabulary.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: skos:Concept

Similarhelp

account_treeOOAPI - program (v5)
arrow_splitfieldsOfStudy

Definition: Field(s) of study (e.g. ISCED-F)

(<http://uis.unesco.org/sites/default/files/documents/isced-fields-of-education-and-training-2013-en.pdf>).

Relevant class(es):

Expected value type: string

Similarhelp

account_treeOOAPI - course (v5)
arrow_splitfieldsOfStudy

Definition: Field(s) of study (e.g. ISCED-F)

(<http://uis.unesco.org/sites/default/files/documents/isced-fields-of-education-and-training-2013-en.pdf>).

Relevant class(es):

Expected value type: string

Property name

title

keyboard_arrow_up
Definition

The title of Learning Opportunity. One value per language is permitted.

Similarhelp

account_treeOOAPI - course (v5)
arrow_splitname

Definition: The name of this course (ECTS-title)

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - program (v5)
arrow_splitname

Definition: The name of this course (ECTS-title)

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)

arrow_splittitle

Definition: The title of Learning Opportunity. One value per language is permitted.

Relevant class(es):

Expected value type: rdf:langString

Property name

type

keyboard_arrow_up

Definition

The type of the learning opportunity. It should be provided using the EDC Controlled List of Learning Opportunity Types.

Similarhelp

account_treeOOAPI - program (v5)

arrow_splitprogramType

Definition: None

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splittype

Definition: The type of the learning opportunity. It should be provided using the EDC Controlled List of Learning Opportunity Types.

Relevant class(es):

Expected value type: skos:Concept

Property name

volume of learning

keyboard_arrow_up

Definition

The estimated number of hours the learner is expected to spend engaged in learning to earn the award. This would include the notional number of hours in class, in group work, in practicals, as well as hours engaged in self-motivated study.

Disaggregatedhelp

account_treeOOAPI - program (v5)

arrow_splitstudyLoad

Definition: None

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitvolume of learning

Definition: The estimated number of hours the learner is expected to spend engaged in learning to earn the award. This would include the notional number of hours in class, in group work, in practicals, as well as hours engaged in self-motivated study.

Relevant class(es): elm:LearningAchievementSpecification

Expected value type: xsd:duration

Disaggregatedhelp

account_treeOOAPI - course (v5)

arrow_splitstudyLoad

Definition: None

Relevant class(es):

Expected value type:

Learning Opportunity Instance

/

Property name

abbreviation

keyboard_arrow_up

Definition

The abbreviation or internal code used to identify this course (ECTS-code)

Identicalhelp

account_treeOOAPI - programoffering (v5)

arrow_splitabbreviation

Definition: The abbreviation or internal code used to identify this course (ECTS-code)

Relevant class(es):

Expected value type: string

Identicalhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitabbreviation

Definition: The abbreviation or internal code used to identify this course (ECTS-code)

Relevant class(es):

Expected value type: string

Property name

admissions procedure

keyboard_arrow_up

Definition

Specific information on how to apply for the course.

Identicalhelp

account_treeELM (3.2)

arrow_splitadmissions procedure

Definition: Specific information on how to apply for the course.

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:Note

Property name

application deadline

keyboard_arrow_up

Definition

The deadline for applying to the course.

Aggregatedhelp

account_treeOOAPI - programoffering (v5)

arrow_splitenrollStartDate

Definition: The first day on which a student can enroll for this course.

Relevant class(es):

Expected value type: string

Aggregatedhelp

account_treeOOAPI - programoffering (v5)

arrow_splitenrollEndDate

Definition: The last day on which a student can enroll for this course.

Relevant class(es):

Expected value type: string

Identicalhelp

account_treeELM (3.2)

arrow_splitapplication deadline

Definition: The deadline for applying to the course.

Relevant class(es): elm:LearningOpportunity

Expected value type: xsd:dateTime

Aggregatedhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitenrollStartDate

Definition: The first day on which a student can enroll for this course.

Relevant class(es):

Expected value type: string

Aggregatedhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitenrollEndDate

Definition: The last day on which a student can enroll for this course.

Relevant class(es):

Expected value type: string

Property name

banner image

keyboard_arrow_up

Definition

An image which is displayed alongside the learning opportunity.

Identicalhelp

account_treeELM (3.2)

arrow_splitbanner image

Definition: An image which is displayed alongside the learning opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:MediaObject

Property name

default language

keyboard_arrow_up

Definition

The base language of the learning opportunity, to be considered authoritative.

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitteachingLanguage

Definition: The (primary) teaching language in which this course is given, should be a three-letter language code as specified by ISO 639-2.

Relevant class(es):

Expected value type: string

Identicalhelp

account_treeELM (3.2)

arrow_splitdefault language

Definition: The base language of the learning opportunity, to be considered authoritative.

Relevant class(es): elm:LearningOpportunity

Expected value type: skos:Concept

Similarhelp

account_treeOOAPI - programoffering (v5)

arrow_splitteachingLanguage

Definition: The (primary) teaching language in which this course is given, should be a three-letter language code as specified by ISO 639-2.

Relevant class(es):

Expected value type: string

Property name

description

keyboard_arrow_up

Definition

A free text description of the learning opportunity. One value per language is permitted.

Identicalhelp

account_treeELM (3.2)

arrow_splitdescription

Definition: A free text description of the learning opportunity. One value per language is permitted.

Relevant class(es): elm:LearningOpportunity

Expected value type: rdf:langString

Similarhelp

account_treeOOAPI - programoffering (v5)

arrow_splitdescription

Definition: The description of this course (ECTS-description).

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitdescription

Definition: The description of this course (ECTS-description).

Relevant class(es):

Expected value type: array

Property name

duration

keyboard_arrow_up

Definition

The nominal duration for which the learning opportunity will continue to run. Note, this may be after the end-date, since admissions may be closed but the learning opportunity may still be ongoing.

Aggregatedhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitendDate

Definition: The moment on which this offering ends, RFC3339 (full-date)

Relevant class(es):

Expected value type: string

Aggregatedhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitflexibleEntryPeriodEnd

Definition: If this is a course wherein participants can start at various moments, without missing anything, use this attribute in combination with `flexibleEntryPeriodStart`.

Relevant class(es):

Expected value type: string

Aggregatedhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitflexibleEntryPeriodStart

Definition: If this is a course wherein participants can start at various moments, without missing anything, use this attribute in combination with `flexibleEntryPeriodEnd`.

Relevant class(es):

Expected value type: string

Aggregatedhelp

account_treeOOAPI - courseoffering (v5)
arrow_splitstartDate

Definition: The moment on which this offering starts, RFC3339 (full-date)

Relevant class(es):

Expected value type: string

Aggregatedhelp

account_treeOOAPI - programoffering (v5)
arrow_splitendDate

Definition: The moment on which this offering ends, RFC3339 (full-date)

Relevant class(es):

Expected value type: string

Aggregatedhelp

account_treeOOAPI - programoffering (v5)
arrow_splitflexibleEntryPeriodEnd

Definition: If this is a course wherein participants can start at various moments, without missing anything, use this attribute in combination with `flexibleEntryPeriodStart`.

Relevant class(es):

Expected value type: string

Aggregatedhelp

account_treeOOAPI - programoffering (v5)
arrow_splitflexibleEntryPeriodStart

Definition: If this is a course wherein participants can start at various moments, without missing anything, use this attribute in combination with `flexibleEntryPeriodEnd`.

Relevant class(es):

Expected value type: string

Aggregatedhelp

account_treeOOAPI - programoffering (v5)
arrow_splitstartDate

Definition: The moment on which this offering starts, RFC3339 (full-date)

Relevant class(es):

Expected value type: string

Identicalhelp

account_treeELM (3.2)

arrow_splitduration

Definition: The nominal duration for which the learning opportunity will continue to run. Note, this may be after the end-date, since admissions may be closed but the learning opportunity may still be ongoing.

Relevant class(es): elm:LearningOpportunity

Expected value type: xsd:duration

Property name

enrolledNumberStudents

keyboard_arrow_up

Definition

The number of students that have already enrolled for this offering

Identicalhelp

account_treeOOAPI - programoffering (v5)

arrow_splitenrolledNumberStudents

Definition: The number of students that have already enrolled for this offering

Relevant class(es):

Expected value type: number

Identicalhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitenrolledNumberStudents

Definition: The number of students that have already enrolled for this offering

Relevant class(es):

Expected value type: number

Property name

fees

keyboard_arrow_up

Definition

Information about the pricing of the course, including fees and scholarships/subsidies available.

Identicalhelp

account_treeELM (3.2)

arrow_splitfees

Definition: Information about the pricing of the course, including fees and scholarships/subsidies available.

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:PriceDetail

Similarhelp

account_treeOOAPI - programoffering (v5)

arrow_splitpriceInformation

Definition: Price information for this offering.

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitpriceInformation

Definition: Price information for this offering.

Relevant class(es):

Expected value type: array

Property name

grant

keyboard_arrow_up

Definition

The grant related to the learning opportunity.

Identicalhelp

account_treeELM (3.2)

arrow_splitgrant

Definition: The grant related to the learning opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:Grant

Property name

has part

keyboard_arrow_up

Definition

A learning opportunity can be composed of other learning opportunities, which when combined make up this larger learning opportunity.

Identicalhelp

account_treeELM (3.2)

arrow_split has part

Definition: A learning opportunity can be composed of other learning opportunities, which when combined make up this larger learning opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:LearningOpportunity

Property name

homepage

keyboard_arrow_up

Definition

The homepage.

Similarhelp

account_treeOOAPI - programoffering (v5)

arrow_split link

Definition: URL of the course's website

Relevant class(es):

Expected value type: string

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_split link

Definition: URL of the course's website

Relevant class(es):

Expected value type: string

Identicalhelp

account_treeELM (3.2)

arrow_splithomepage

Definition: The homepage.

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:WebResource

Property name

identifier

keyboard_arrow_up

Definition

An alternative Identifier of the Learning Opportunity.

Similarhelp

account_treeOOAPI - programoffering (v5)

arrow_splitprimaryCode

Definition: The primary human readable identifier for this course. This is often the source identifier as defined by the institution.

Relevant class(es):

Expected value type:

Similarhelp

account_treeOOAPI - programoffering (v5)

arrow_splitotherCodes

Definition: An array of additional human readable codes/identifiers for the entity being described.

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitotherCodes

Definition: An array of additional human readable codes/identifiers for the entity being described.

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - courseoffering (v5)
 arrow_splitprimaryCode

Definition: The primary human readable identifier for this course. This is often the source identifier as defined by the institution.

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)
 arrow_splitidentifier

Definition: An alternative Identifier of the Learning Opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type:

Property name

is part of

keyboard_arrow_up
 Definition

A learning opportunity can be part of other learning opportunity.

Similarhelp

account_treeOOAPI - programoffering (v5)
 arrow_splitprogramOffering

Definition: The programoffering where this courseoffering is related to.

[`expandable`](#tag/program_offering_model) By default only the `programOfferingId` (a string) is returned. If the client requested an expansion of `programOffering` the full programOffering object should be returned.

Relevant class(es):

Expected value type:

Similarhelp

account_treeOOAPI - courseoffering (v5)
 arrow_splitprogramOffering

Definition: The programoffering where this courseoffering is related to.

[`expandable`](#tag/program_offering_model) By default only the `programOfferingId` (a string) is returned. If the client requested an expansion of `programOffering` the full

programOffering object should be returned.

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitis part of

Definition: A learning opportunity can be part of other learning opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:LearningOpportunity

Property name

last modification date

keyboard_arrow_up

Definition

The date when the learning opportunity was last modified.

Identicalhelp

account_treeELM (3.2)

arrow_splitlast modification date

Definition: The date when the learning opportunity was last modified.

Relevant class(es): elm:LearningOpportunity

Expected value type: xsd:dateTime

Property name

learning achievement specification

keyboard_arrow_up

Definition

The learning achievement specification, including the curricula, of this learning opportunity.

Disaggregatedhelp

account_treeOOAPI - programoffering (v5)

arrow_splitcourse

Definition: The course that is offered in this courseoffering.

[`expandable`](#tag/course_model) By default only the `courseId` (a string) is returned. If the client requested an expansion of `course` the full course object should be returned.

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitlearning achievement specification

Definition: The learning achievement specification, including the curricula, of this learning opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type:

Disaggregatedhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitcourse

Definition: The course that is offered in this courseoffering.

[`expandable`](#tag/course_model) By default only the `courseId` (a string) is returned. If the client requested an expansion of `course` the full course object should be returned.

Relevant class(es):

Expected value type:

Property name

learning activity specification

keyboard_arrow_up

Definition

The learning activity specification, including the curricula, of this learning opportunity.

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitcourse

Definition: The course that is offered in this courseoffering.

[`expandable`](#tag/course_model) By default only the `courseId` (a string) is returned. If the client requested an expansion of `course` the full course object should be returned.

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitlearning activity specification

Definition: The learning activity specification, including the curricula, of this learning opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:LearningActivitySpecification

Disaggregatedhelp

account_treeOOAPI - programoffering (v5)

arrow_splitcourse

Definition: The course that is offered in this courseoffering.

[`expandable`](#tag/course_model) By default only the `courseId` (a string) is returned. If the client requested an expansion of `course` the full course object should be returned.

Relevant class(es):

Expected value type:

Property name

learning schedule

keyboard_arrow_up

Definition

The learning schedule. It should be provided using the EDC Controlled List of Learning Schedule Types.

Identicalhelp

account_treeELM (3.2)

arrow_splitlearning schedule

Definition: The learning schedule. It should be provided using the EDC Controlled List of Learning Schedule Types.

Relevant class(es): elm:LearningOpportunity

Expected value type: skos:Concept

Disaggregatedhelp

account_treeOOAPI - courseoffering (v5)
arrow_splitconsumers

Definition: The additional consumer elements that can be provided, see the [documentation on support for specific consumers](https://open-education-api.github.io/specification/#/consumers) for more information about this mechanism.

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - programoffering (v5)
arrow_splitconsumers

Definition: The additional consumer elements that can be provided, see the [documentation on support for specific consumers](https://open-education-api.github.io/specification/#/consumers) for more information about this mechanism.

Relevant class(es):

Expected value type: array

Property name

location

keyboard_arrow_up
Definition

The location where the learning opportunity was provided at.

Similarhelp

account_treeOOAPI - programoffering (v5)
arrow_splitaddresses

Definition: Addresses for this course

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - courseoffering (v5)
arrow_splitaddresses

Definition: Addresses for this course

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)

arrow_splitlocation

Definition: The location where the learning opportunity was provided at.

Relevant class(es): elm:LearningOpportunity

Expected value type: dcterms:Location

Property name

maxNumberStudents

keyboard_arrow_up

Definition

The maximum number of students allowed to enroll for this offering

Identicalhelp

account_treeOOAPI - programoffering (v5)

arrow_splitmaxNumberStudents

Definition: The maximum number of students allowed to enroll for this offering

Relevant class(es):

Expected value type: number

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitmaxNumberStudents

Definition: The maximum number of students allowed to enroll for this offering

Relevant class(es):

Expected value type: number

Property name

minNumberStudents

keyboard_arrow_up

Definition

The minimum number of students needed for this offering to proceed

Identicalhelp

account_treeOOAPI - programoffering (v5)

arrow_splitminNumberStudents

Definition: The minimum number of students needed for this offering to proceed

Relevant class(es):

Expected value type: number

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitminNumberStudents

Definition: The minimum number of students needed for this offering to proceed

Relevant class(es):

Expected value type: number

Property name

mode

keyboard_arrow_up

Definition

The mode of learning Opportunity. It should be provided using the EDC Controlled List of Modes Of Learning and Assessment.

Similarhelp

account_treeOOAPI - programoffering (v5)

arrow_splitmodeOfDelivery

Definition: None

Relevant class(es):

Expected value type:

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitmodeOfDelivery

Definition: None

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitmode

Definition: The mode of learning Opportunity. It should be provided using the EDC Controlled List of Modes Of Learning and Assessment.

Relevant class(es): elm:LearningOpportunity

Expected value type: skos:Concept

Property name

more information

keyboard_arrow_up

Definition

An additional free text note about the Learning Opportunity.

Identicalhelp

account_treeELM (3.2)

arrow_splitmore information

Definition: An additional free text note about the Learning Opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:Note

Property name

other documents

keyboard_arrow_up

Definition

A public web document containing additional documentation about the Learning Opportunity.

Identicalhelp

account_treeELM (3.2)

arrow_splitother documents

Definition: A public web document containing additional documentation about the Learning Opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:WebResource

Property name

pendingNumberStudents

keyboard_arrow_up

Definition

The number of students that have a pending enrollment request for this offering

Identicalhelp

account_treeOOAPI - programoffering (v5)

arrow_splitpendingNumberStudents

Definition: The number of students that have a pending enrollment request for this offering

Relevant class(es):

Expected value type: number

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitpendingNumberStudents

Definition: The number of students that have a pending enrollment request for this offering

Relevant class(es):

Expected value type: number

Property name

provided by

keyboard_arrow_up

Definition

The organisation providing or directing the learning opportunity. In the case of, e.g., joint qualifications, there may be several organisations directing the learning opportunity.

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitorganization

Definition: The organization that manages this group.

[`expandable`](#tag/organization_model) By default only the `organizationId` (a string) is returned. If the client requested an expansion of `organization` the full organization object

should be returned.

Relevant class(es):

Expected value type:

Disaggregatedhelp

account_treeOOAPI - programoffering (v5)

arrow_splitorganization

Definition: The organization that manages this group.

[`expandable`](#tag/organization_model) By default only the `organizationId` (a string) is returned. If the client requested an expansion of `organization` the full organization object should be returned.

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitprovided by

Definition: The organisation providing or directing the learning opportunity. In the case of, e.g., joint qualifications, there may be several organisations directing the learning opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:Organisation

Property name

publisher

keyboard_arrow_up

Definition

The publisher of the Learning Opportunity.

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitorganization

Definition: The organization that manages this group.

[`expandable`](#tag/organization_model) By default only the `organizationId` (a string) is returned. If the client requested an expansion of `organization` the full organization object should be returned.

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitpublisher

Definition: The publisher of the Learning Opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type:

Disaggregatedhelp

account_treeOOAPI - programoffering (v5)

arrow_splitorganization

Definition: The organization that manages this group.

[`expandable`](#tag/organization_model) By default only the `organizationId` (a string) is returned. If the client requested an expansion of `organization` the full organization object should be returned.

Relevant class(es):

Expected value type:

Property name

resultExpected

keyboard_arrow_up

Definition

resultExpected, previously known as isLineItem is used so the specific instance of the object is identified as being an element that CAN contain “grade” information. Offerings do not always have to result in a grade or an other type of result. If there is a result expected from a programOffering/courseOffering/componentOffering the is resultExpected field should parse true

Identicalhelp

account_treeOOAPI - programoffering (v5)

arrow_splitresultExpected

Definition: resultExpected, previously known as isLineItem is used so the specific instance of the object is identified as being an element that CAN contain “grade” information. Offerings do not always have to result in a grade or an other type of result. If

there is a result expected from a programOffering/courseOffering/componentOffering the is resultExpected field should parse true

Relevant class(es):

Expected value type: boolean

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitresultExpected

Definition: resultExpected, previously known as isLineItem is used so the specific instance of the object is identified as being an element that CAN contain “grade” information. Offerings do not always have to result in a grade or an other type of result. If there is a result expected from a programOffering/courseOffering/componentOffering the is resultExpected field should parse true

Relevant class(es):

Expected value type: boolean

Property name

resultValueType

keyboard_arrow_up

Definition

None

Identicalhelp

account_treeOOAPI - programoffering (v5)

arrow_splitresultValueType

Definition: None

Relevant class(es):

Expected value type:

Identicalhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitresultValueType

Definition: None

Relevant class(es):

Expected value type:

Property name

schedule information

keyboard_arrow_up

Definition

Detailed information about the timetable or schedule. This may include weekly schedules (e.g., 'Every Monday, 4pm', but may also include the overall schedule for the course, (e.g., October: lectures, November: group-work, December: break, January: assessment).

Concepthelp

account_treeOOAPI - courseoffering (v5)

arrow_splitconsumers

Definition: The additional consumer elements that can be provided, see the [documentation on support for specific consumers](https://open-education-api.github.io/specification/#/consumers) for more information about this mechanism.

Relevant class(es):

Expected value type: array

Concepthelp

account_treeOOAPI - programoffering (v5)

arrow_splitconsumers

Definition: The additional consumer elements that can be provided, see the [documentation on support for specific consumers](https://open-education-api.github.io/specification/#/consumers) for more information about this mechanism.

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)

arrow_splitschedule information

Definition: Detailed information about the timetable or schedule. This may include weekly schedules (e.g., 'Every Monday, 4pm', but may also include the overall schedule for the course, (e.g., October: lectures, November: group-work, December: break, January: assessment).

Relevant class(es): elm:LearningOpportunity

Expected value type: elm:Note

Property name

status

keyboard_arrow_up

Definition

The publication status of the learning opportunity.

Identicalhelp

account_treeELM (3.2)

arrow_splitstatus

Definition: The publication status of the learning opportunity.

Relevant class(es): elm:LearningOpportunity

Expected value type: xsd:string

Property name

temporal

keyboard_arrow_up

Definition

The associated period of time shape.

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitacademicSession

Definition: The academicsession during which this courseoffering takes place.

[`expandable`](#tag/academic_session_model) By default only the `academicSessionId` (a string) is returned. If the client requested an expansion of `academicSession` the full academicsession object should be returned.

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splittemporal

Definition: The associated period of time shape.

Relevant class(es): elm:LearningOpportunity

Expected value type: dcterms:PeriodOfTime

Similarhelp

account_treeOOAPI - programoffering (v5)

arrow_splitacademicSession

Definition: The academic session during which this course offering takes place.

[`expandable`](#tag/academic_session_model) By default only the `academicSessionId` (a string) is returned. If the client requested an expansion of `academicSession` the full academic session object should be returned.

Relevant class(es):

Expected value type:

Property name

title

keyboard_arrow_up

Definition

The title of Learning Opportunity. One value per language is permitted.

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitname

Definition: The name of this course (ECTS-title)

Relevant class(es):

Expected value type: array

Similarhelp

account_treeOOAPI - programoffering (v5)

arrow_splitname

Definition: The name of this course (ECTS-title)

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)

arrow_splittitle

Definition: The title of Learning Opportunity. One value per language is permitted.

Relevant class(es): elm:LearningOpportunity

Expected value type: rdf:langString

Property name

type

keyboard_arrow_up

Definition

The type of the learning opportunity. It should be provided using the EDC Controlled List of Learning Opportunity Types.

Similarhelp

account_treeOOAPI - courseoffering (v5)

arrow_splitofferingType

Definition: The type of this offering

Relevant class(es):

Expected value type: string

Identicalhelp

account_treeELM (3.2)

arrow_splittype

Definition: The type of the learning opportunity. It should be provided using the EDC Controlled List of Learning Opportunity Types.

Relevant class(es): elm:LearningOpportunity

Expected value type: skos:Concept

Similarhelp

account_treeOOAPI - programoffering (v5)

arrow_splitofferingType

Definition: The type of this offering

Relevant class(es):

Expected value type: string

Education Provider

/

Property name

VAT number

keyboard_arrow_up

Definition

The Value-Added Tax ID.

Disaggregatedhelp

account_treeOOAPI - organization (v5)

arrow_splitotherCodes

Definition: An array of additional human readable codes/identifiers for the entity being described.

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)

arrow_splitVAT number

Definition: The Value-Added Tax ID.

Relevant class(es):

Expected value type: elm:LegalIdentifier

Property name

accreditation

keyboard_arrow_up

Definition

The associated accreditation.

Identicalhelp

account_treeELM (3.2)
arrow_splitaccreditation

Definition: The associated accreditation.

Relevant class(es):

Expected value type: elm:Accreditation

Property name

alternative name

keyboard_arrow_up

Definition

The alternative name of the learning achievement specification.

Identicalhelp

account_treeELM (3.2)
arrow_splitalternative name

Definition: The alternative name of the learning achievement specification.

Relevant class(es):

Expected value type: rdf:langString

Similarhelp

account_treeOOAPI - organization (v5)
arrow_splitshortName

Definition: Short name of the organization

Relevant class(es):

Expected value type: string

Property name

child organisation

keyboard_arrow_up

Definition

A smaller organisation of which forms part of this organisation, e.g., a department within a larger organisation.

Identicalhelp

account_treeELM (3.2)

arrow_splitchild organisation

Definition: A smaller organisation of which forms part of this organisation, e.g., a department within a larger organisation.

Relevant class(es):

Expected value type: elm:Organisation

Similarhelp

account_treeOOAPI - organization (v5)

arrow_splitchildren

Definition: Programs which are a part of this program (e.g specializations). This object is [`expandable`](#tag/program_model)

Relevant class(es):

Expected value type: array

Property name

contact information

keyboard_arrow_up

Definition

The contact information of an organisation.

Identicalhelp

account_treeELM (3.2)

arrow_splitcontact information

Definition: The contact information of an organisation.

Relevant class(es):

Expected value type: elm:ContactPoint

Similarhelp

account_treeOOAPI - organization (v5)

arrow_splitaddresses

Definition: Addresses for this course

Relevant class(es):

Expected value type: array

Property name

eIDAS identifier

keyboard_arrow_up

Definition

The official identification number of the organisation, as awarded by the relevant national authority.

Identicalhelp

account_treeELM (3.2)

arrow_splitIDAS identifier

Definition: The official identification number of the organisation, as awarded by the relevant national authority.

Relevant class(es):

Expected value type: elm:LegalIdentifier

Property name

group member of

keyboard_arrow_up

Definition

The group the organisation is a member of.

Concepthelp

account_treeOOAPI - organization (v5)

arrow_splitconsumers

Definition: The additional consumer elements that can be provided, see the [documentation on support for specific consumers](<https://open-education-api.github.io/specification/#/consumers>) for more information about this mechanism.

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)

arrow_splitgroup member of

Definition: The group the organisation is a member of.

Relevant class(es):

Expected value type: elm:Group

Property name

homepage

keyboard_arrow_up

Definition

The homepage.

Identicalhelp

account_treeELM (3.2)

arrow_splithomepage

Definition: The homepage.

Relevant class(es):

Expected value type: elm:WebResource

Similarhelp

account_treeOOAPI - organization (v5)

arrow_splitlink

Definition: URL of the course's website

Relevant class(es):

Expected value type: string

Property name

identifier

keyboard_arrow_up

Definition

An alternative Identifier of the Learning Opportunity.

Similarhelp

account_treeOOAPI - organization (v5)

arrow_splitorganizationId

Definition: Unique id of this organization

Relevant class(es):

Expected value type: string

Similarhelp

account_treeOOAPI - organization (v5)

arrow_splitprimaryCode

Definition: The primary human readable identifier for this course. This is often the source identifier as defined by the institution.

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitidentifier

Definition: An alternative Identifier of the Learning Opportunity.

Relevant class(es):

Expected value type:

Property name

last modification date

keyboard_arrow_up

Definition

The date when the learning opportunity was last modified.

Identicalhelp

account_treeELM (3.2)

arrow_splitlast modification date

Definition: The date when the learning opportunity was last modified.

Relevant class(es):

Expected value type: xsd:dateTime

Property name

legal name

keyboard_arrow_up

Definition

The legal name of the organisation.

Identicalhelp

account_treeELM (3.2)

arrow_splitlegal name

Definition: The legal name of the organisation.

Relevant class(es):

Expected value type: rdf:langString

Disaggregatedhelp

account_treeOOAPI - organization (v5)

arrow_splitname

Definition: The name of this course (ECTS-title)

Relevant class(es):

Expected value type: array

Property name

location

keyboard_arrow_up

Definition

The location where the learning opportunity was provided at.

Identicalhelp

account_treeELM (3.2)

arrow_splitlocation

Definition: The location where the learning opportunity was provided at.

Relevant class(es):

Expected value type: dcterms:Location

Similarhelp

account_treeOOAPI - organization (v5)

arrow_splitaddresses

Definition: Addresses for this course

Relevant class(es):

Expected value type: array

Property name

logo

keyboard_arrow_up

Definition

The logo of the organisation.

Identicalhelp

account_treeOOAPI - organization (v5)

arrow_splitlogo

Definition: Logo of this organization

Relevant class(es):

Expected value type: string

Identicalhelp

account_treeELM (3.2)

arrow_splitlogo

Definition: The logo of the organisation.

Relevant class(es):

Expected value type: elm:MediaObject

Property name

more information

keyboard_arrow_up

Definition

An additional free text note about the Learning Opportunity.

Similarhelp

account_treeOOAPI - organization (v5)

arrow_splitdescription

Definition: The description of this course (ECTS-description).

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)

arrow_splitmore information

Definition: An additional free text note about the Learning Opportunity.

Relevant class(es):

Expected value type: elm:Note

Property name

parent organisation

keyboard_arrow_up

Definition

Indicates a larger organisation of which this organisation is a part of, e.g., the organisation within which a department operates.

Similarhelp

account_treeOOAPI - organization (v5)

arrow_splitparent

Definition: Parent program of which the current program is a child. This object is [`expandable`](#tag/program_model)

Relevant class(es):

Expected value type:

Identicalhelp

account_treeELM (3.2)

arrow_splitparent organisation

Definition: Indicates a larger organisation of which this organisation is a part of, e.g., the organisation within which a department operates.

Relevant class(es):

Expected value type: elm:Organisation

Property name

preferred name

keyboard_arrow_up

Definition

- The name of the group.
- The name of the time period, e.g., semester. One value per language is permitted.
- The preferred name of the agent. One value per language is permitted.
- The text equivalent of the code content component. One value per language is permitted.
- The title of price/price category. One value per language is permitted.

Similarhelp

account_treeOOAPI - organization (v5)

arrow_splitname

Definition: The name of this course (ECTS-title)

Relevant class(es):

Expected value type: array

Property name

publisher

keyboard_arrow_up

Definition

The publisher of the Learning Opportunity.

Identicalhelp

account_treeELM (3.2)

arrow_splitpublisher

Definition: The publisher of the Learning Opportunity.

Relevant class(es):

Expected value type:

Property name

registration

keyboard_arrow_up

Definition

The legal identifier of an organisation. The identifier given to a registered organisation by the authority with which it is registered. The legal status of a registered organisation is conferred on it by an authority within a given jurisdiction. The Legal Identifier is therefore a

fundamental relationship between an organisation and the authority with which it is registered.

Aggregatedhelp

account_treeOOAPI - organization (v5)
arrow_splitotherCodes

Definition: An array of additional human readable codes/identifiers for the entity being described.

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)
arrow_splitregistration

Definition: The legal identifier of an organisation. The identifier given to a registered organisation by the authority with which it is registered. The legal status of a registered organisation is conferred on it by an authority within a given jurisdiction. The Legal Identifier is therefore a fundamental relationship between an organisation and the authority with which it is registered.

Relevant class(es):

Expected value type: elm:LegalIdentifier

Property name

status

keyboard_arrow_up
Definition

The publication status of the learning opportunity.

Identicalhelp

account_treeELM (3.2)
arrow_splitstatus

Definition: The publication status of the learning opportunity.

Relevant class(es):

Expected value type: xsd:string

Property name

tax/fiscal identifier

keyboard_arrow_up

Definition

Fiscal ID of the organisation.

Disaggregatedhelp

account_treeOOAPI - organization (v5)

arrow_splitotherCodes

Definition: An array of additional human readable codes/identifiers for the entity being described.

Relevant class(es):

Expected value type: array

Identicalhelp

account_treeELM (3.2)

arrow_splittax/fiscal identifier

Definition: Fiscal ID of the organisation.

Relevant class(es):

Expected value type: elm:LegalIdentifier

Property name

type

keyboard_arrow_up

Definition

The type of the learning opportunity. It should be provided using the EDC Controlled List of Learning Opportunity Types.

Identicalhelp

account_treeELM (3.2)

arrow_splitttype

Definition: The type of the learning opportunity. It should be provided using the EDC Controlled List of Learning Opportunity Types.

Relevant class(es):

Expected value type: skos:Concept

Similarhelp

account_treeOOAPI - organization (v5)

arrow_splitorganizationType

Definition: The type of this organization. Each OOAPI endpoint should have a single organization with type `root`, describing the root organization. - root: the root of this organization, representing the Educational Institution itself - institute: instituut - department: departement - faculty: faculteit - branch: vestiging - academy: academie - school: school

Relevant class(es):

Expected value type: string

