01

Agenda

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Opening. Introduction to QCP Steering Group
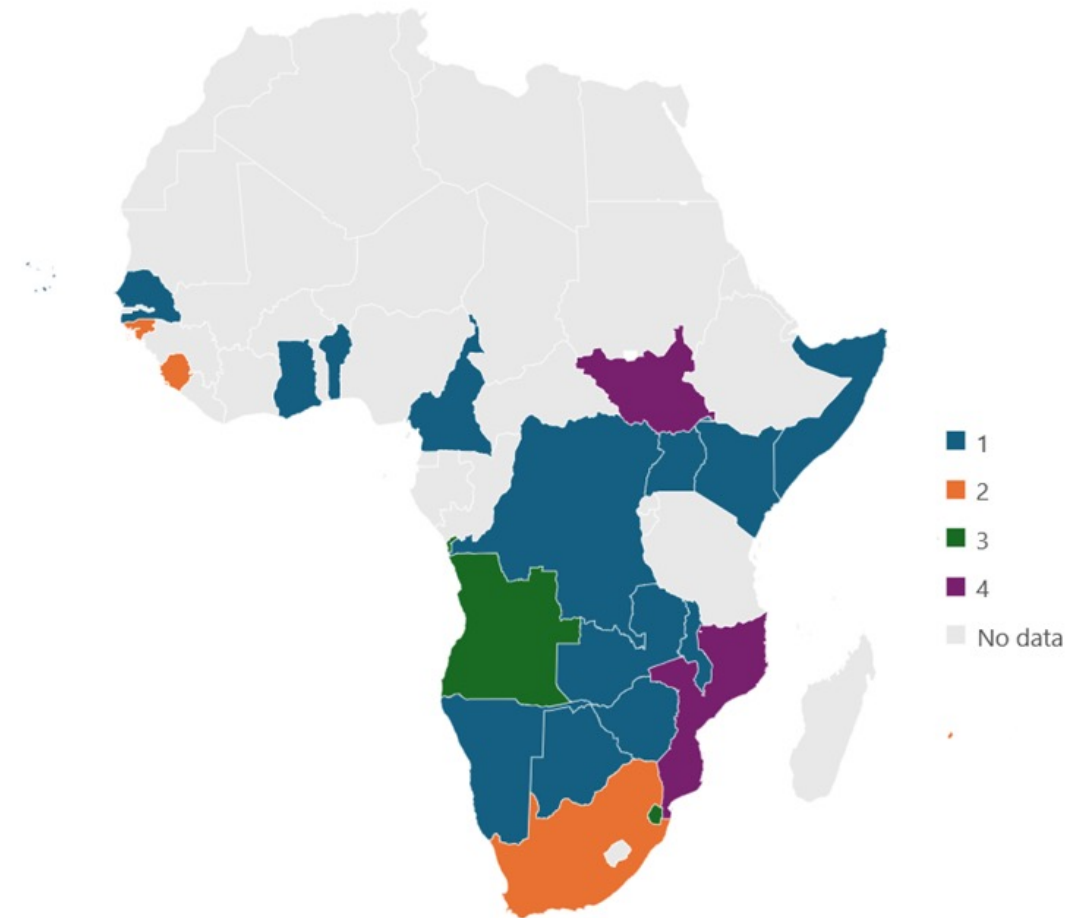
Opening

03

Stakeholder needs assessment – Baseline Analysis Report + Q&A

Scope and key details about the data collection

- Objective of Activity 2: to collect information and data for the fine-tuning and contextualisation of the proposed concept and architecture of the qualifications and credentials platform (QCP).

- Methodology: **webinars** and a **survey**.

- The survey was open from **March 14th** to **26th**, 2024. **39 complete responses** were collected, from **23 countries**.

- Most respondents were representatives from national qualification authorities (14), national government ministries (12) and quality assurance or qualifications bodies (12).

- Usually, one response was submitted per country, except in Angola, Eswatini, Seychelles (3), Mozambique and South Sudan (4).
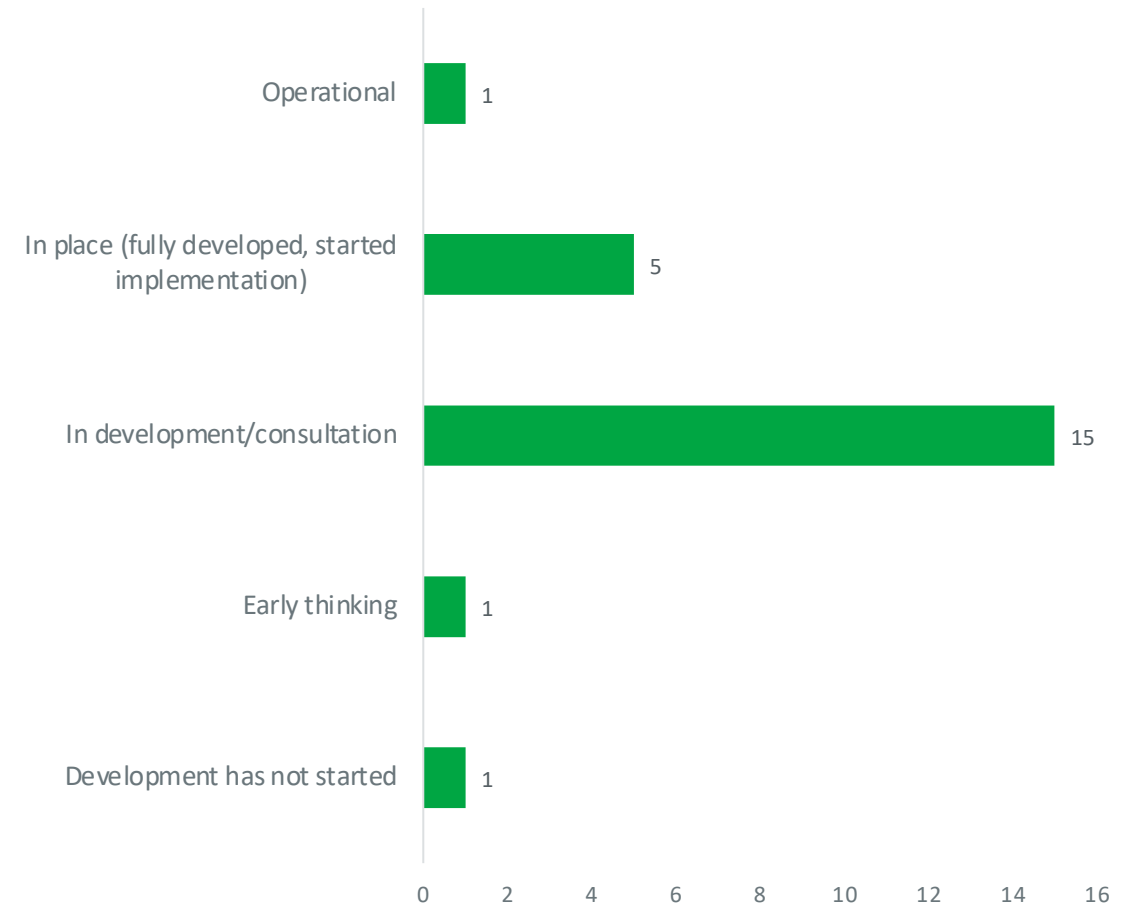

Geographic distribution of the respondents across the continent

3.1

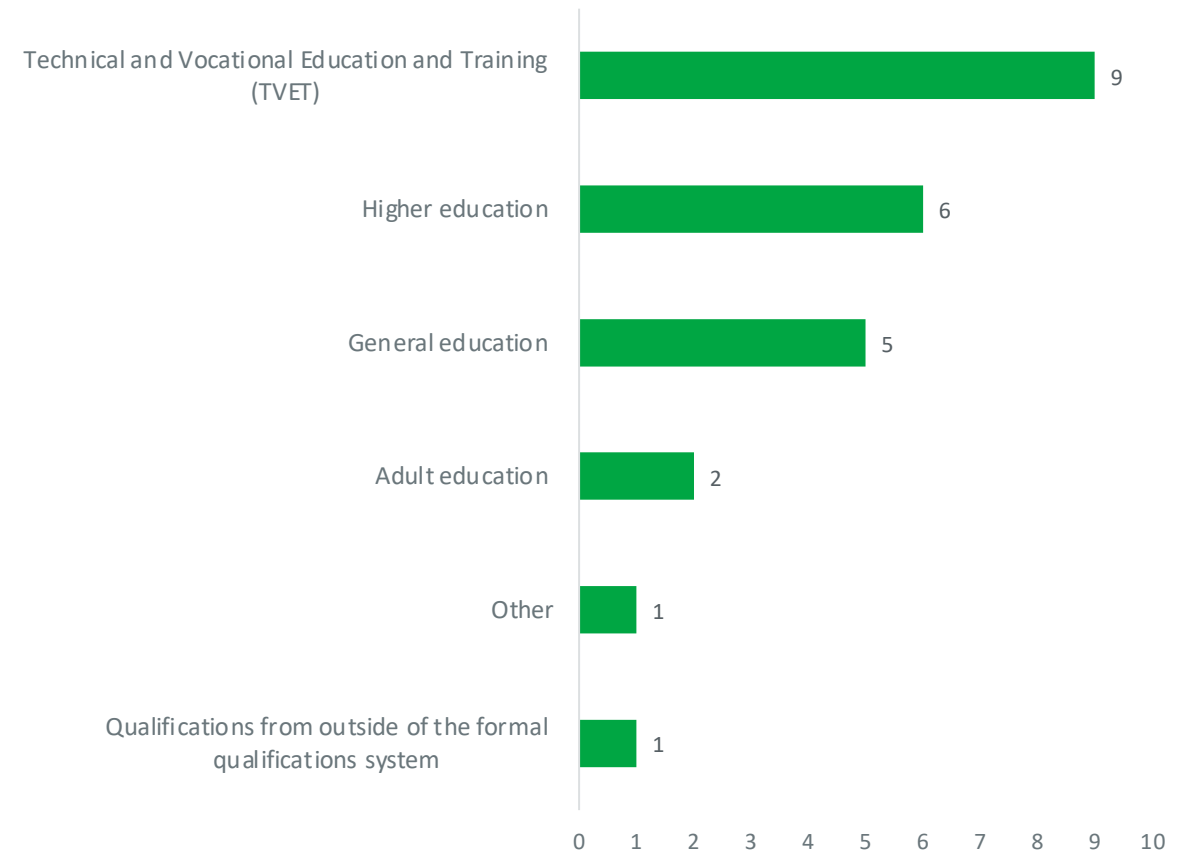## Baseline analysis findings

Current state of development

- In **most cases, there is still active work happening on databases**, while some of the countries. There are only a few countries with an operational qualifications and credentials database in place (6). Most respondents signalled that their databases are under development or in consultation currently (16).

- Only a part of the respondents indicated that funding is sufficient for **the long-term sustainability of the databases** (13 or 39.4%), while 11 (33.3%) identified that the funding is insufficient for long-term maintenance.

Operational — 1
In place (fully developed, started implementation) — 5
In development/consultation — 15
Early thinking — 1
Development has not started — 1

0 2 4 6 8 10 12 14 16

Stage of development of qualifications and credentials databases (countries)

Main characteristics of databases

- Technical and Vocational Education and Training (TVET) sector stands out (31 respondents, 79.5%) among sectors that publish qualifications data. Followed by HE (24 or 61.5%) and general education (20, 51.5%).

- While the frequency of qualifications being included in the databases is lower, **TVET is represented most frequently**.

Technical and Vocational Education and Training (TVET) — 9

Higher education — 6

General education — 5

Adult education — 2

Other — 1

Qualifications from outside of the formal qualifications system — 1
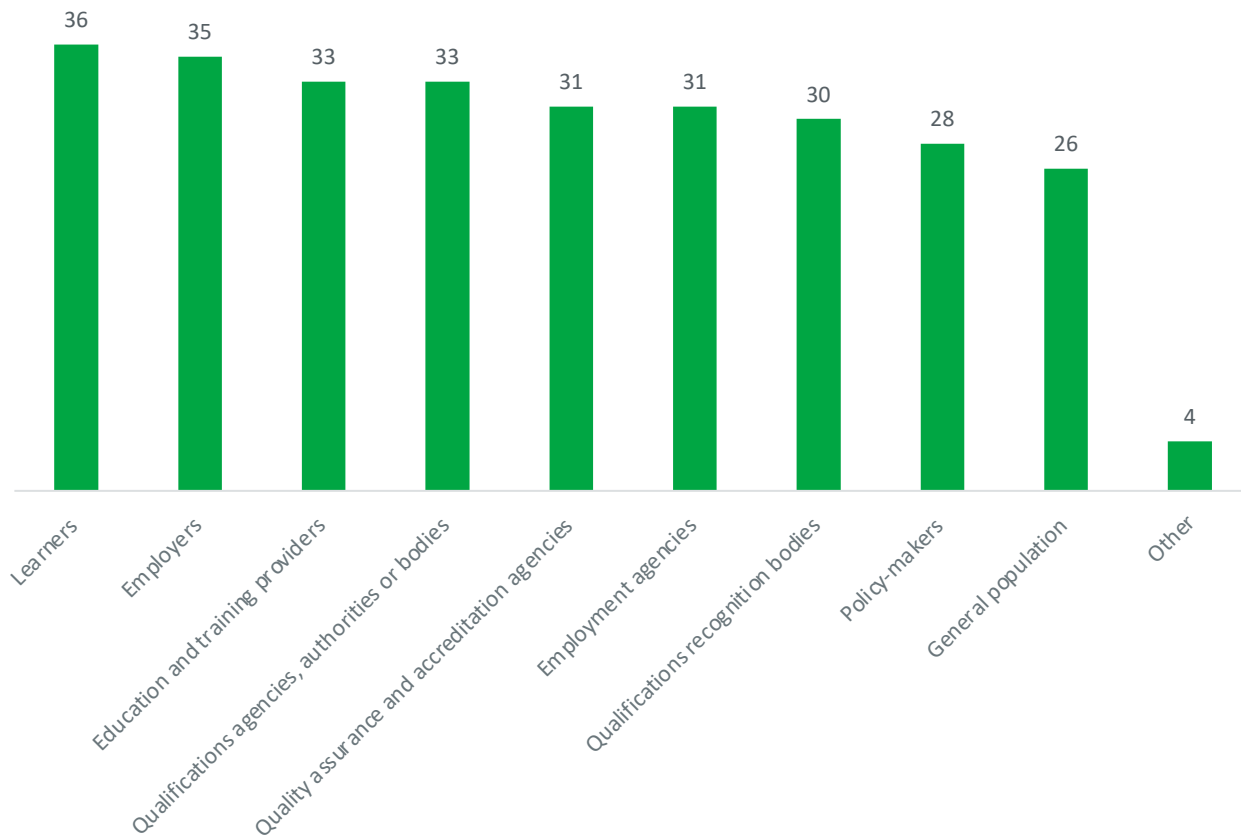
0 1 2 3 4 5 6 7 8 9 10

Education and training sectors currently included in qualifications database(s)/register(s) (multiple-choice)

Characteristics of databases: technical details

	Data-entry	Update frequency	Data versioning	Public access
Botswana	Centralised	Near-to-real-time	Yes	-
Cabo Verde	Other	Near-to-real-time	Yes	-
Ghana	Other	Near-to-real-time	Cannot answer	-
Mauritius	Decentralised	-	-	No
Namibia	Centralised	Near-to-real-time	Yes	-
Seychelles	Centralised	Near-to-real-time	Cannot answer	--
Sierra Leone	-	Near-to-real-time	Cannot answer	
South Africa	Centralised/Decentralised	Near-to-real-time	Yes	Yes
Zambia	Centralised	Quarterly	No measures	-

- The mapping showed that there is a **clear favour for centralized data-entry methods; near-to-real-time updating of data, as well as for data access.**

- In the case of countries with an existing QCD, technicians tend to use documents (in a PDF, .doc format) most frequently (5 times). Spreadsheets and relational databases are implemented in equal measure (2, 2 cases).

Main user groups

36 — Learners
35 — Employers
33 — Education and training providers
33 — Qualifications agencies, authorities or bodies
31 — Quality assurance and accreditation agencies
31 — Employment agencies
30 — Qualifications recognition bodies
28 — Policy-makers
26 — General population
4 — Other

Stakeholder groups that would be the intended users of national qualifications and credentials databases (multiple-choice)

- Stakeholders expect the database to **cater to a wide range of different audiences**. The groups that would be primary database users are learners (36) and employers (35) and various official bodies. The general population was mentioned less frequently (26).

- Among the countries that have databases already operational, citizens, however, are mentioned as the ones that actively use the databases.

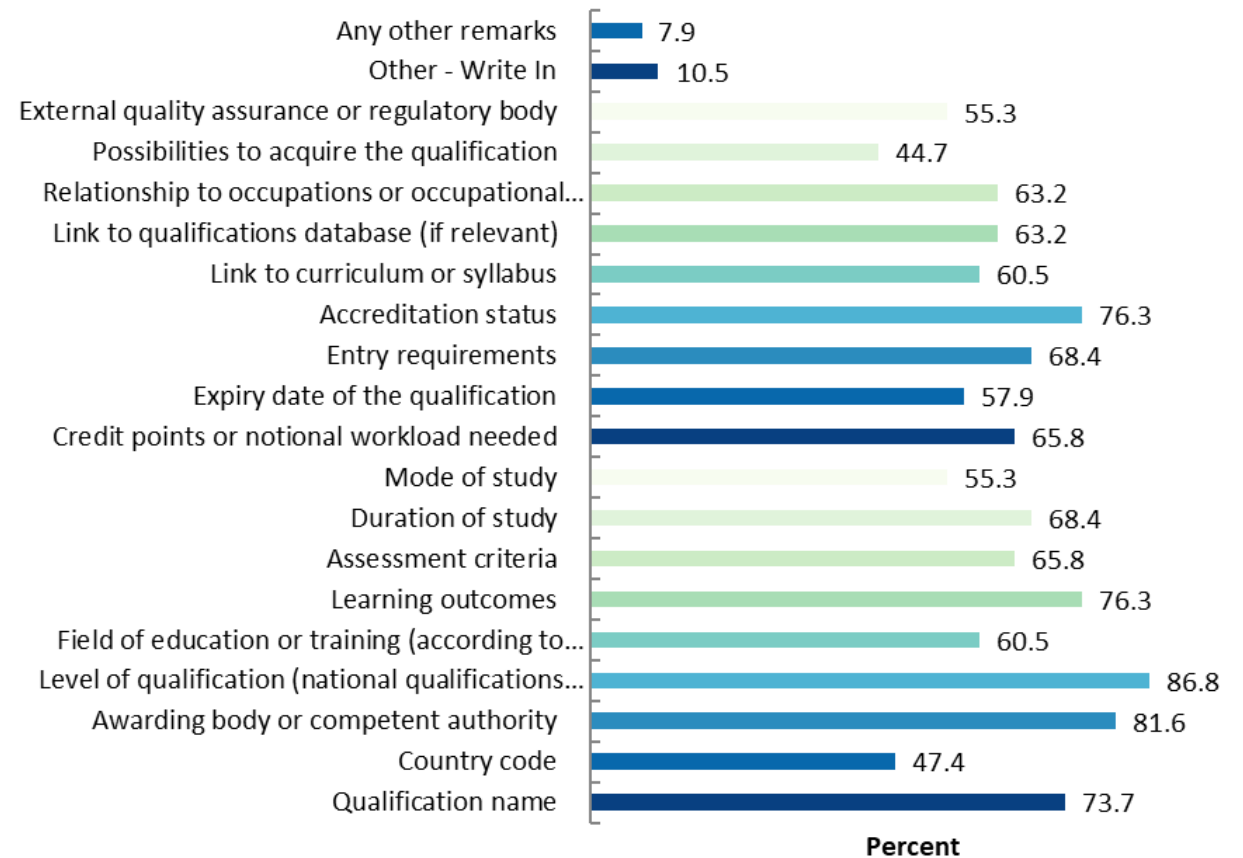# **Stakeholder needs and expectations**

- Survey participants were asked to provide:
    1. What type of information in the database users typically need
    2. Primary citizen needs
    3. Primary needs of administrators of qualifications and credentials databases
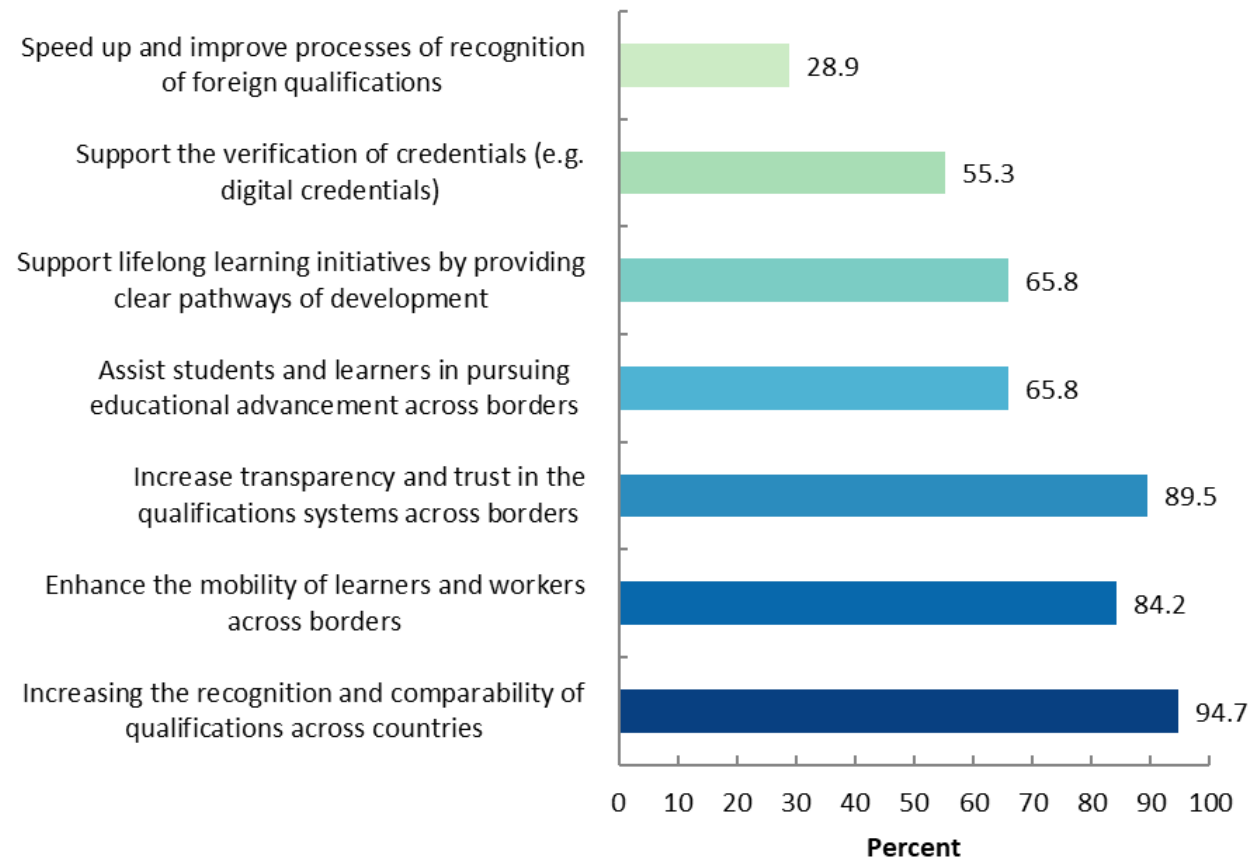
Stakeholder needs and expectations

Type of information in the database users typically need

Priority: Authoritative data

e.g. who is the awarding body, accreditation status and what level of qualification

General: None of the previously identified needs is irrelevant

Category	Percent
Any other remarks	7.9
Other - Write In	10.5
External quality assurance or regulatory body	55.3
Possibilities to acquire the qualification	44.7
Relationship to occupations or occupational...	63.2
Link to qualifications database (if relevant)	63.2
Link to curriculum or syllabus	60.5
Accreditation status	76.3
Entry requirements	68.4
Expiry date of the qualification	57.9
Credit points or notional workload needed	65.8
Mode of study	55.3
Duration of study	68.4
Assessment criteria	65.8
Learning outcomes	76.3
Field of education or training (according to...	60.5
Level of qualification (national qualifications...	86.8
Awarding body or competent authority	81.6
Country code	47.4
Qualification name	73.7

Percent

Stakeholder needs and expectations

ACQF

Category	Percent
Speed up and improve processes of recognition of foreign qualifications	28.9
Support the verification of credentials (e.g. digital credentials)	55.3
Support lifelong learning initiatives by providing clear pathways of development	65.8
Assist students and learners in pursuing educational advancement across borders	65.8
Increase transparency and trust in the qualifications systems across borders	89.5
Enhance the mobility of learners and workers across borders	84.2
Increasing the recognition and comparability of qualifications across countries	94.7

Percent

Primary citizen needs
- Three highly desired
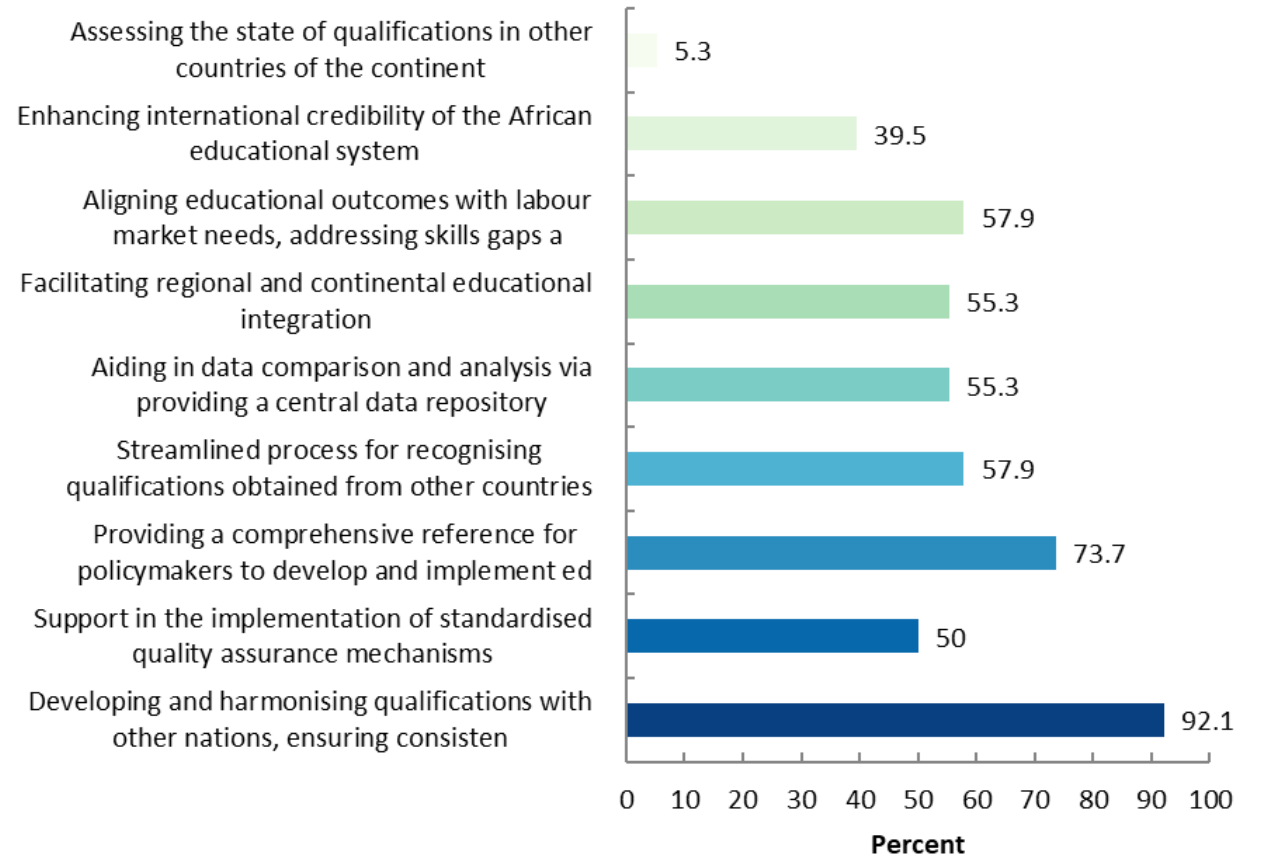- Three desired
- One less desired
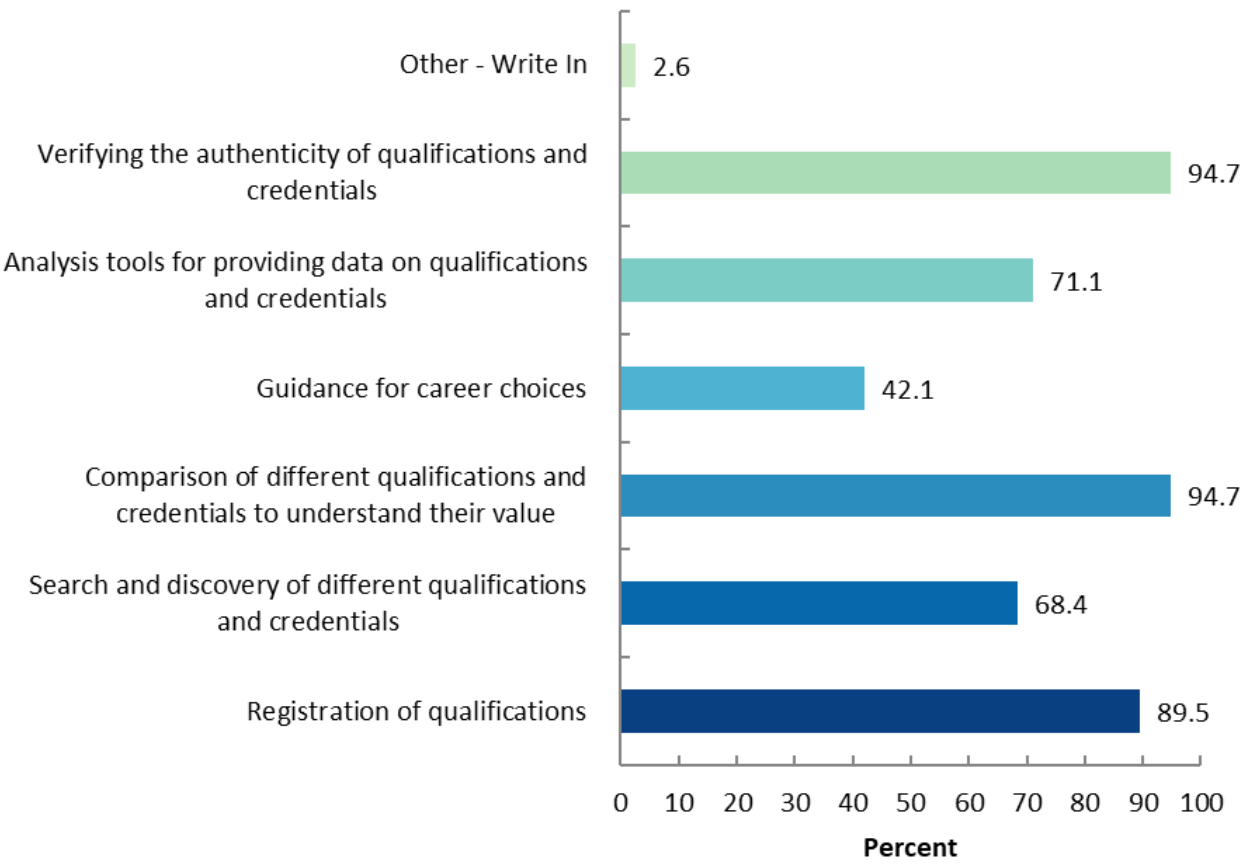
Observation:
- Core functionality is priority

Stakeholder needs and expectations

Primary needs of administrators

- Highly important target group for success of QCP

- Cross-cutting needs

- Highlights interest in cooperation but autonomy

Category	Percent
Assessing the state of qualifications in other countries of the continent	5.3
Enhancing international credibility of the African educational system	39.5
Aligning educational outcomes with labour market needs, addressing skills gaps a	57.9
Facilitating regional and continental educational integration	55.3
Aiding in data comparison and analysis via providing a central data repository	55.3
Streamlined process for recognising qualifications obtained from other countries	57.9
Providing a comprehensive reference for policymakers to develop and implement ed	73.7
Support in the implementation of standardised quality assurance mechanisms	50
Developing and harmonising qualifications with other nations, ensuring consisten	92.1

Percent

Desired features and functionalities

Primary features of a QCP most likely to be used

- Clear priorities

- Division into primary and secondary features

- Provides focus of initial development

Desired features and functionalities

Free-text → Usage of the QCP dependent on stakeholder

- Recognition
- Comparison
- Informing Policy
- Foreshadowing
- Skill gap analysis
- Market needs
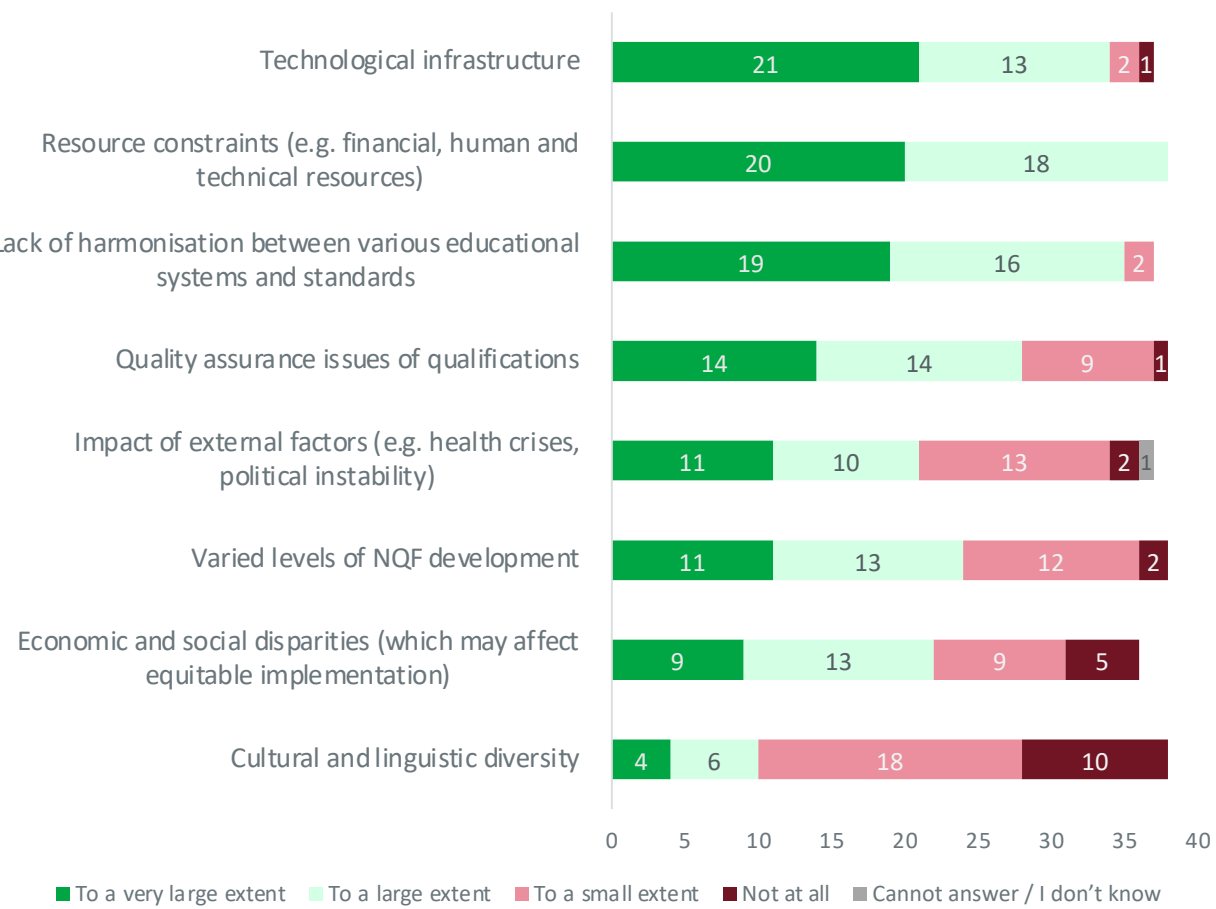- Verification and validity
- Baseline use-cases iE Registration of data

Excerpt of high-level features

Desired scope

- Stakeholders prefer to have a **multi-faceted database**. 40% of respondents claim that all sectors should be covered by the platforms. TVET, HE and general education

- Stakeholders would like to include **a wide selection of qualifications**, the most prominent among those being qualifications from professional bodies, certificates, diplomas and degrees. However, the survey respondents also acknowledge the importance of including micro-credentials, part qualifications, and international credentials.
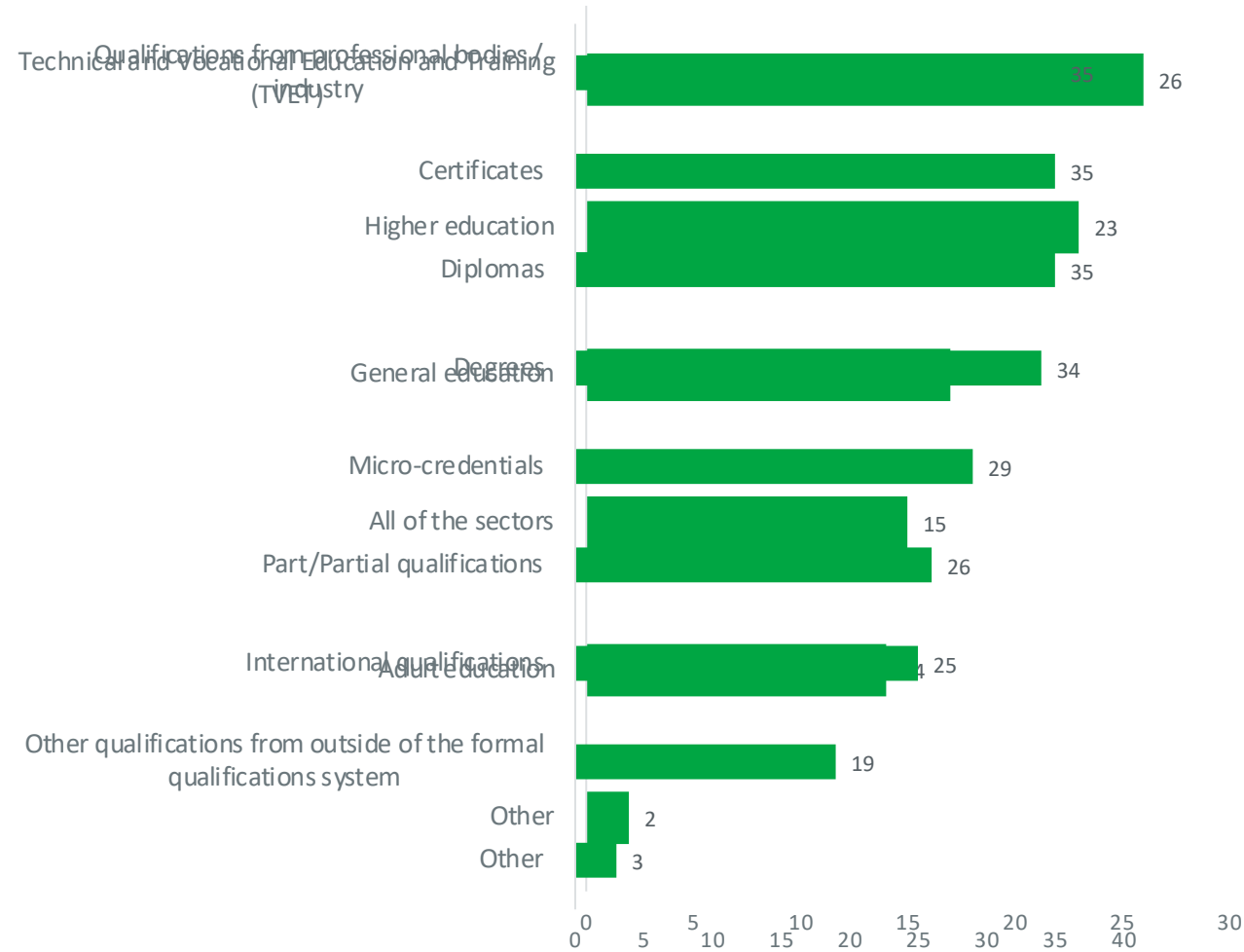
Qualifications that the respondents' organisations would like to include in the QCD (multiple-choice)

Qualifications that the respondents' organisations would like to include in the QCD (multiple-choice)

Stakeholder concerns and challenges

The extent to which barriers may hinder the achievement of ACQF QCP (multiple-choice)

Legend: ■ To a very large extent ■ To a large extent ■ To a small extent ■ Not at all ■ Cannot answer / I don't know

Chart data (horizontal stacked bars):
- Technological infrastructure: 21, 13, 2, 1
- Resource constraints (e.g. financial, human and technical resources): 20, 18
- Lack of harmonisation between various educational systems and standards: 19, 16, 2
- Quality assurance issues of qualifications: 14, 14, 9, 1
- Impact of external factors (e.g. health crises, political instability): 11, 10, 13, 2, 1
- Varied levels of NQF development: 11, 13, 12, 2
- Economic and social disparities (which may affect equitable implementation): 9, 13, 9, 5
- Cultural and linguistic diversity: 4, 6, 18, 10

- More than half of respondents think that **technological infrastructure** (21), **resource constraints** (20) and lack of **harmonisation** (19) are factors that, might hinder the achievement of the databases the most.

- Consequently, most of the **suggested solution**s revolved around increased harmonisation efforts, capacity building and training, the provision of sufficient funding, better cooperation across countries and stakeholders, and awareness raising were the most salient topics.

Survey and stakeholder consultation findings

- The **implementation of QCD** varies among countries according to the development phase of their ACQF system. This highlights the need for unified strategies and support mechanisms.

- Current databases are mostly focused on Technical and Vocational Education and Training (TVET), with varying degrees of coverage for other sectors, reflecting differences in database maturity and institutional capacities.

- **Various data formats** are used across countries, that need to be harmonized. There is **more uniformity regarding data-entry and update frequency**.

- Stakeholders identified **learners, employers, education and training providers, and qualifications agencies as the main intended user groups** of QCDs. Comprehensive information on stakeholder needs can inform the database design and outreach strategies.

Survey and stakeholder consultation findings - 2

- Stakeholders prefer **covering all education and training sectors with a greater emphasis on TVET and higher education**. Desired qualifications to be included ranged from certificates, degrees and diplomas to qualifications from professional bodies or industries.

- **Key challenges** identified included technological infrastructure limitations, resource constraints, and lack of harmonisation between educational systems. Stakeholders emphasised the need for harmonization and continued assistance through workshops, funding allocation, advocacy, and awareness-raising efforts. Responding to these concerns is critical for overcoming barriers to database development. ACQF was often mentioned as providing instrumental assistance on some of these matters.

Recommendations for Activity 1

- Main objectives
  - Enhance transparency
  - Mutual understanding
  - Recognition of qualifications and credentials across AU Member States

- QCP → transparency instrument to support national frameworks

- Core features of the QCP need to build on key features identified in stakeholder consultation
  - Easy registration and management of qualifications
  - Search, Comparison and visualisation at the centre
  - Provision of credible and reliably data → facilitated recognition process of qualifications and credentials

3.2

Clarification of qualitative questions

3.3

Audience Q&A

04

Break

05

Architecture Report: Prioritise User Stories + Q&A

User Requirements Listing

- As a **Qualifications Curator**, I want to add data from my national qualifications database into the ACQF QCP
- As a **Qualifications Curator**, I want to manage, quality assure and publish my data ACQF QCP
- As a **System Administrator**, I wish to manage permissions at a country level
- As a **Citizen**, I wish to search, organise and visualise qualifications
- As a **Citizen**, I wish to compare qualifications
- As a **Data User**, I wish to retrieve data from the ACQF DB

ACQF

As a Qualifications Curator, I want to add data from my national qualifications database into the ACQF QCP

01

Import Qualifications from a National Database in JSON or JSON-LD

Retrieve a JSON or JSON-LD file containing qualifications data from a national qualifications database, formatted according to the ACQF data model, and add that data to the ACQF QCP.

02

Support Automatic and Manual Retrieval

Support import of data files either via :
- manual upload of data to the platform,
- by setting up a public API endpoint to which the data can sent

03

Enter Qualifications Data directly in UI

For qualifications curators that do not have qualifications data available as importable structured data, the system should provide a web-based UI to enter individual qualifications for their specific country manually, following the properties/fields of the ACQF data model.

As a Qualifications Curator, I want to manage, quality assure and publish my data ACQF QCP

01

Check for Duplicates

When data is added via import, the system should check for duplicate qualification records, and discard them from the data addition. In order of priority, this may include:

- Check for exact copies (MUST)
- Check for new versions (i.e. same title, awarding body, country, ISCED fields etc, but different description & learning outcomes) (RECOMMEND)

02

Verify Uploaded Data

Check that input data meets all mandatory verification criteria as specified in the ACQF data model profile, and throw an error for any records that do not.

03

Manage Qualification Status

Set the following qualification statuses and roles:
- Draft/Uploading for qualifications where data import/upload/entering has not been completed
- In Review for qualifications that have not been approved for Publication
- Approved for qualifications that have been approved for publication
- Published for qualifications that have been published

04

Require User Confirmation for Publication

Require users to manually approve each qualification for publication. Provide a functionality to provide this approval in bulk.

As a Qualifications Curator, I want to manage, quality assure and publish my data ACQF QCP

05

Add URI & Publication Metadata

On publication, each record should be appended with:

- a URI (which will be dereferencable to the data contained in the record)
- data the publisher, date of publication

07

Multilingual user-interface

The user-interface should be multilingual, supporting at minimum English, French and Portuguese.

06

Immutable Records

Once published, all records must be immutable.

08

Establish ACQF Namespace

A namespace will be required to host permanent URIs that dereference to concepts in the data model, as well as all published data.

As an Administrator, I wish to manage permissions and settings at a country level

01

Define Country Administrators

As an administrator, be able to create/delete/edit accounts for country administrators, and associate those country administrators with a specific country.

02

Sandbox Data between countries

Ensure that country administrators, and all qualifications curators managed by those country administrators, can only access and manage data linked to the country to which they are associated. Therefore, a user account (except the administrator) is always linked to only one country.

03

Define Qualification Curators

As an administrator or as a country administrator, create/delete/edit accounts for qualification curators, and associate those qualification curators with a specific country.

As an Administrator, I wish to manage permissions and settings at a country level

04

Country Administrator Permissions

Country administrators may change the ownership of data in the system, and for any data in the system:
- Create new records
- Edit or delete records which have not been published

This only applies to data from the country to which the country administrator is associated.

05

Qualification Curator Permissions

Qualification curators can change import or enter data, and for data which they own:
- Create new records
- Edit or delete records which have not been published

By default a qualification curator should own any data they upload or enter.

As a Citizen, I wish to search, organise and visualise qualifications

01

Search for Qualifications

Search for qualifications on a public portal, across multiple languages, using a mixture of keyword and semantic search.

02

Filter Qualifications

Filter the list of results of qualifications based on multiple facets, such as by country, region, qualification type, QF level, education sector, etc.

03

View Qualifications
On clicking on a qualification, a user should be able to view:
- All available fields
- In all languages the qualification data is available in
- the URI and publication metadata, including any versioning information

04

Multilingual user-interface

The user-interface should be multilingual, supporting at minimum English, French and Portuguese.

As a Citizen, I wish to compare qualifications

01

View Similar Qualifications

When a qualification is displayed as per requirement 4.4, it should also show a list of related qualifications based on a mixture of semantic and keyword search.

02

Compare Qualifications side-by-side (Default)

Visualise 2 qualifications side-by-side, with each field consisting of a row, to allow for manual comparison.

As a Data User, I wish to retrieve data from the ACQF DB

01

Search for Qualifications via API

Provide the search functionality described in 4.1 as a SPARQL API, returning data in JSON format.

02

Retrieve Qualification Data via API

Fetch all data about a qualification via a SPARQL API, in JSON-LD or RDF format.

5.2

Q&A: Prioritise User Stories

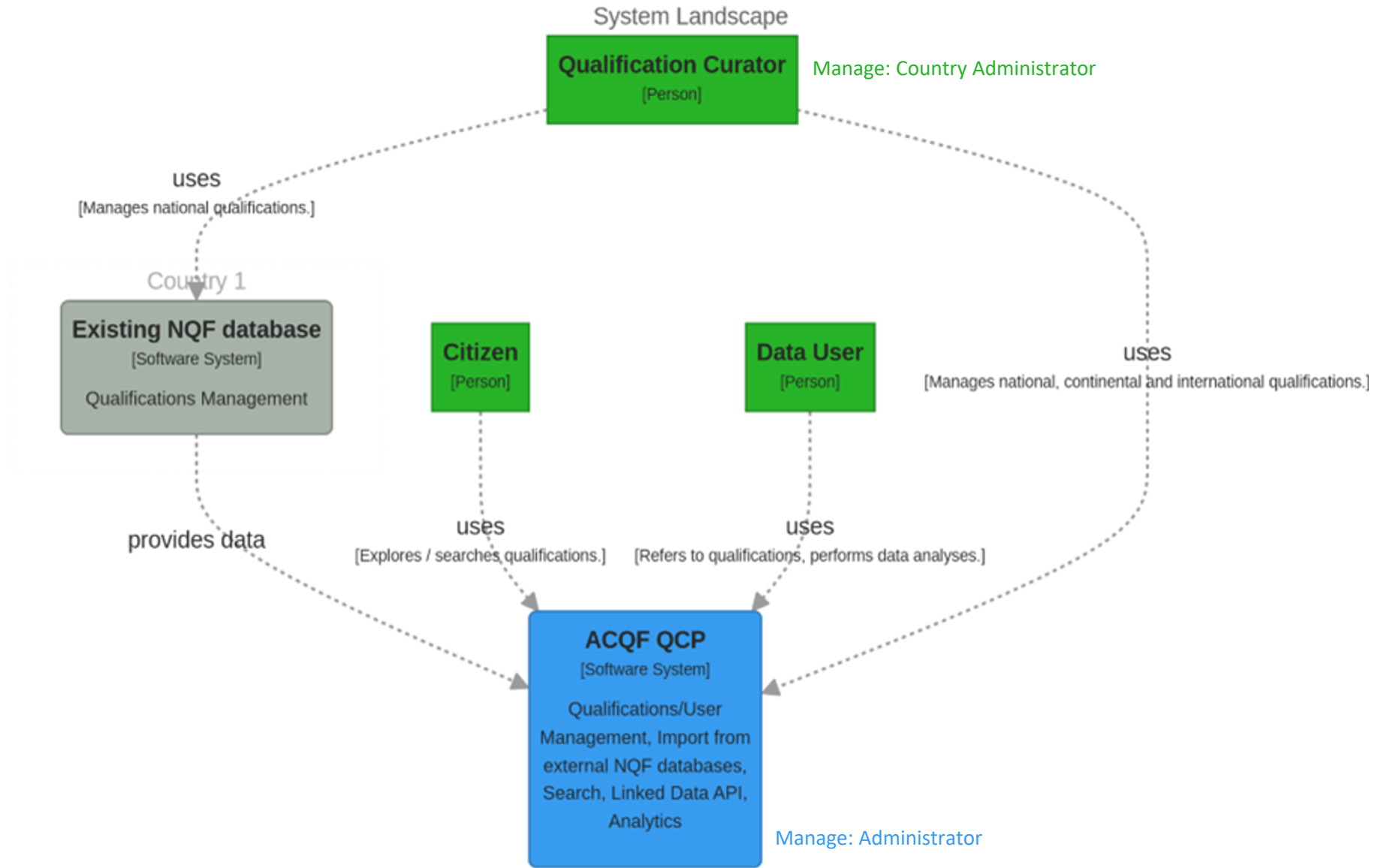# Architecture Report: Software Architecture + Q&A

Architecture Objectives

- **Databases and Data Storage:** Two-layered; national and continental databases.

- **Interoperability Focus:** Alignment with existing open standards and good practices.

- **Citizen and Analysis Features:** Offering features for data classification, comparison, and visualisation.

Centralized System Architecture

- **Unification:** Single point of setup and maintenance.
- **Data Integration:** Local management, continental storage.
- **Centralized Data Storage:** Synchronization with continental database for consistency.

Centralized System Architecture

System Landscape

Qualification Curator
[Person]

Manage: Country Administrator

uses
[Manages national qualifications.]

Country 1

Existing NQF database
[Software System]

Qualifications Management

Citizen
[Person]

Data User
[Person]

uses
[Manages national, continental and international qualifications.]

provides data

uses
[Explores / searches qualifications.]

uses
[Refers to qualifications, performs data analyses.]

ACQF QCP
[Software System]

Qualifications/User Management, Import from external NQF databases, Search, Linked Data API, Analytics

Manage: Administrator

Technology Overview

- **Front-End Technologies:** Modern Angular web frameworks, Mobile friendly citizen interface.

- **Back-End Technologies:** Scalable technologies like Elasticsearch, combined with Semantic technologies, ensuring data richness and reusability.

- **Integration Practices:** Leveraging existing technologies for efficient development.

Security Measures and Data Protection

- **Authentication and Authorization:** Role-based access control.
- **Data Security:** Encrypted and covered with transaction management.
- **API Security:** Secured authentication and authorisation.
- **UI Security:** Client-side validation to ensure data integrity.

Q&A: Software Architecture

07

# Architecture Report:
Data Architecture + Q&A

Model objectives

- Aligning with global standards
- Foundation for interoperability among NQFs
- Facilitate the exchange of qualification data
- Ensuring recognition on a global scale

Architecture and Assumptions

- Leveraging existing learning models to ensure best practices
- Flexible data architecture that can be centralised or decentralised
- Using JSON / JSON-LD for seamless data exchange
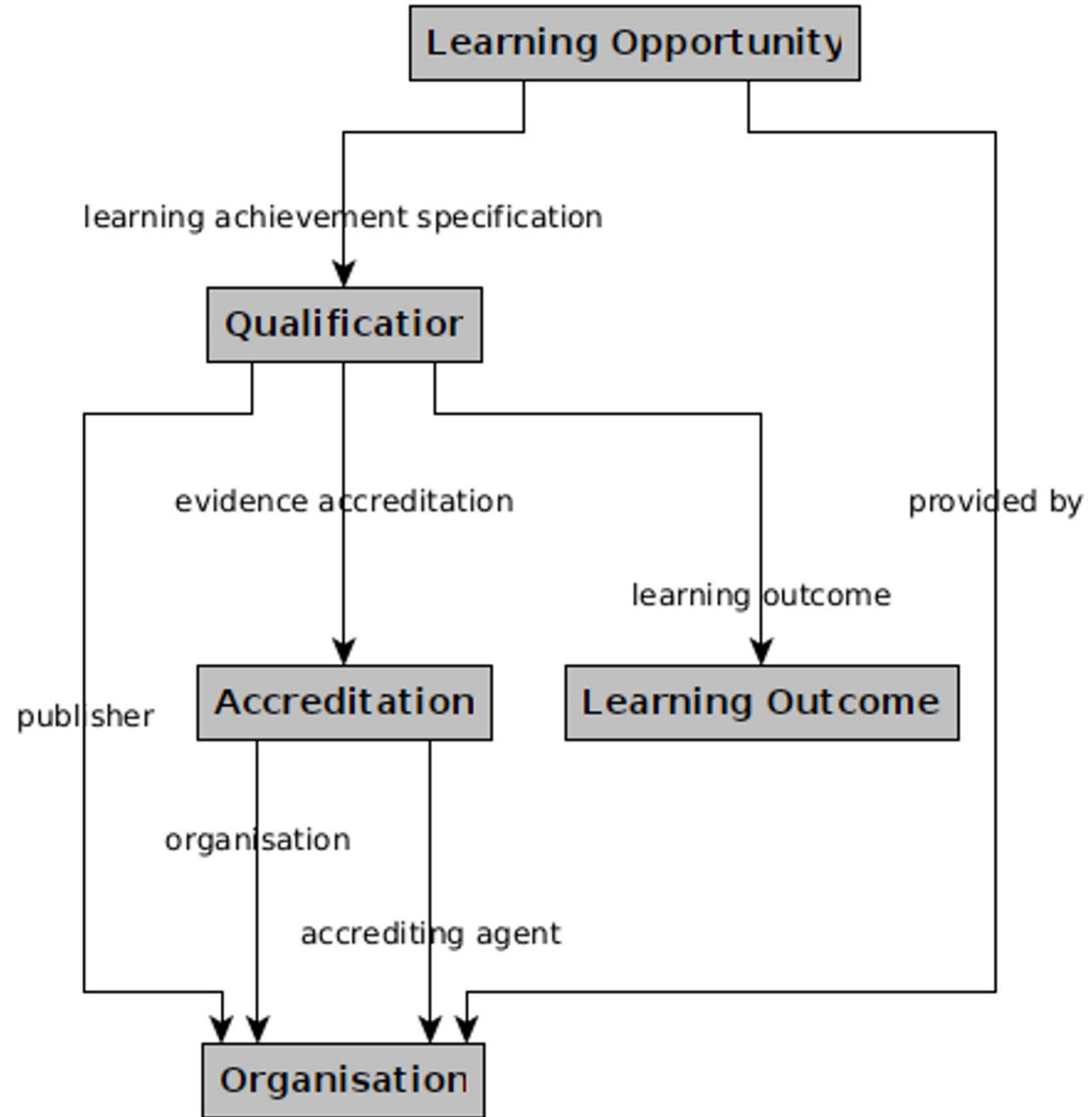- Facilitating Open Data exchange and related practices

Application Profile
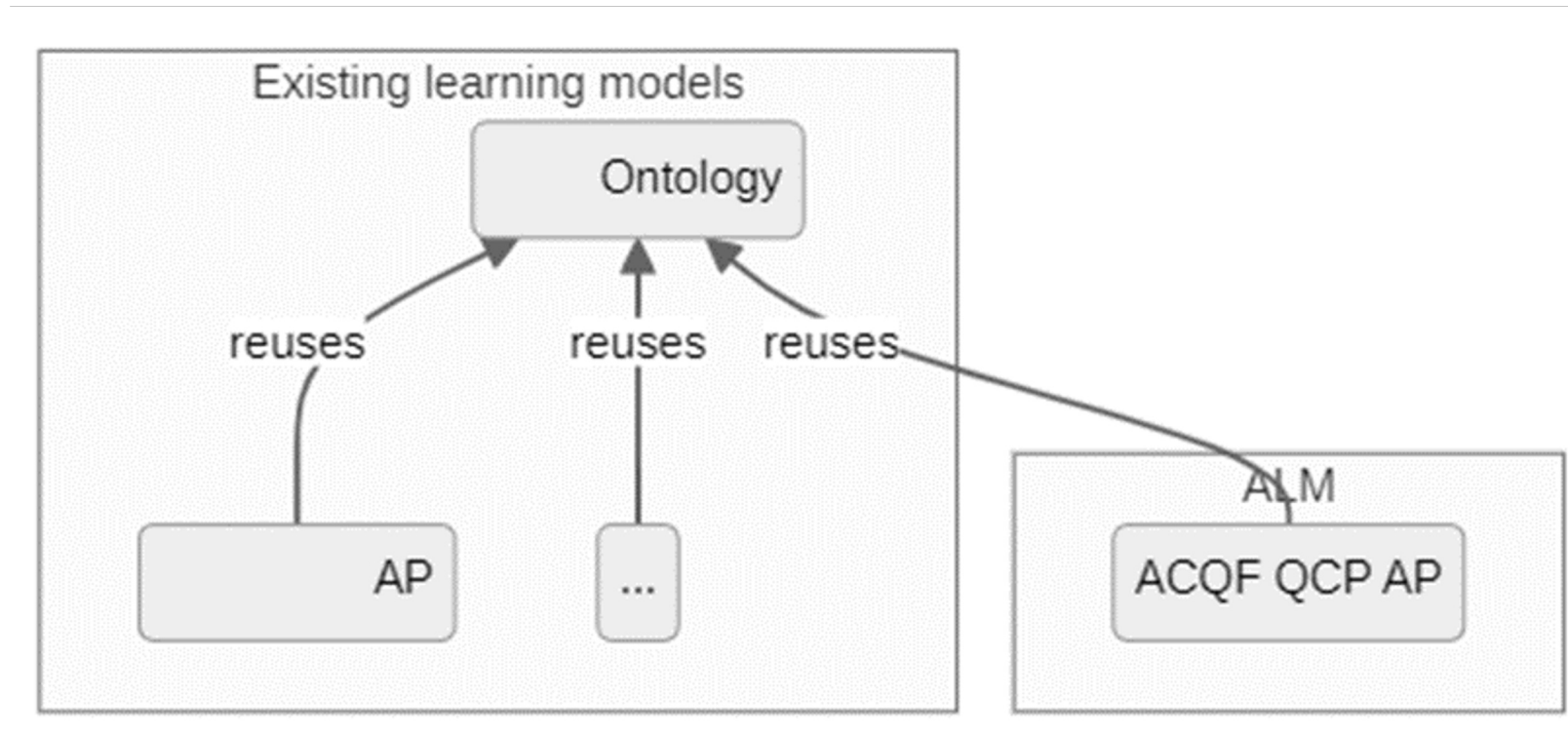
Application Profile

- Dependence (and interoperability) with existing models
- Reference to international identifiers
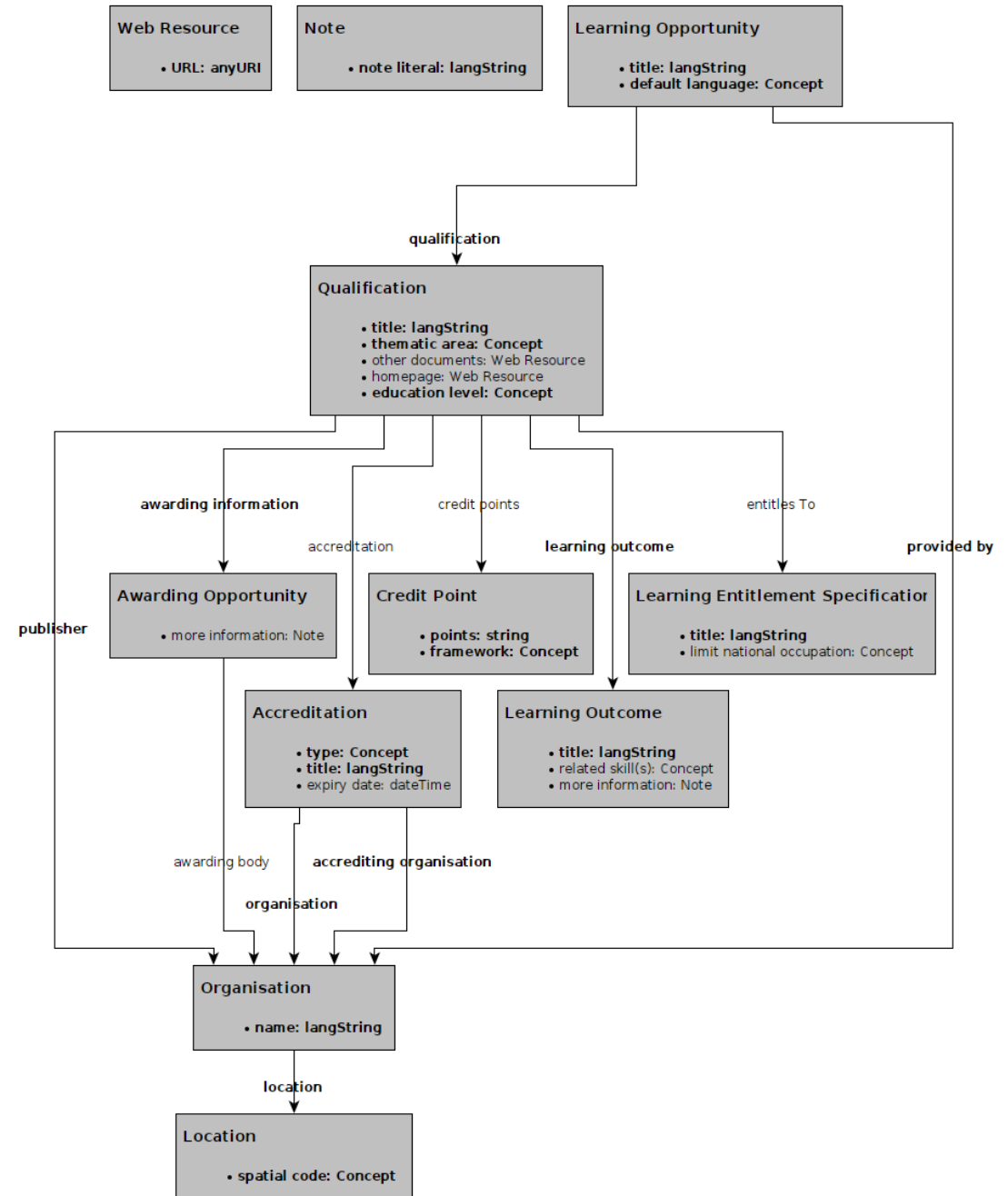- Potential need for alignment over time

Classes and Properties

• Simplified view

Classes and Properties

- Expanded view

Web Resource

- URL: anyURI

Note

- note literal: langString

Learning Opportunity

- title: langString
- default language: Concept

qualification

Qualification

- title: langString
- thematic area: Concept
- other documents: Web Resource
- homepage: Web Resource
- education level: Concept
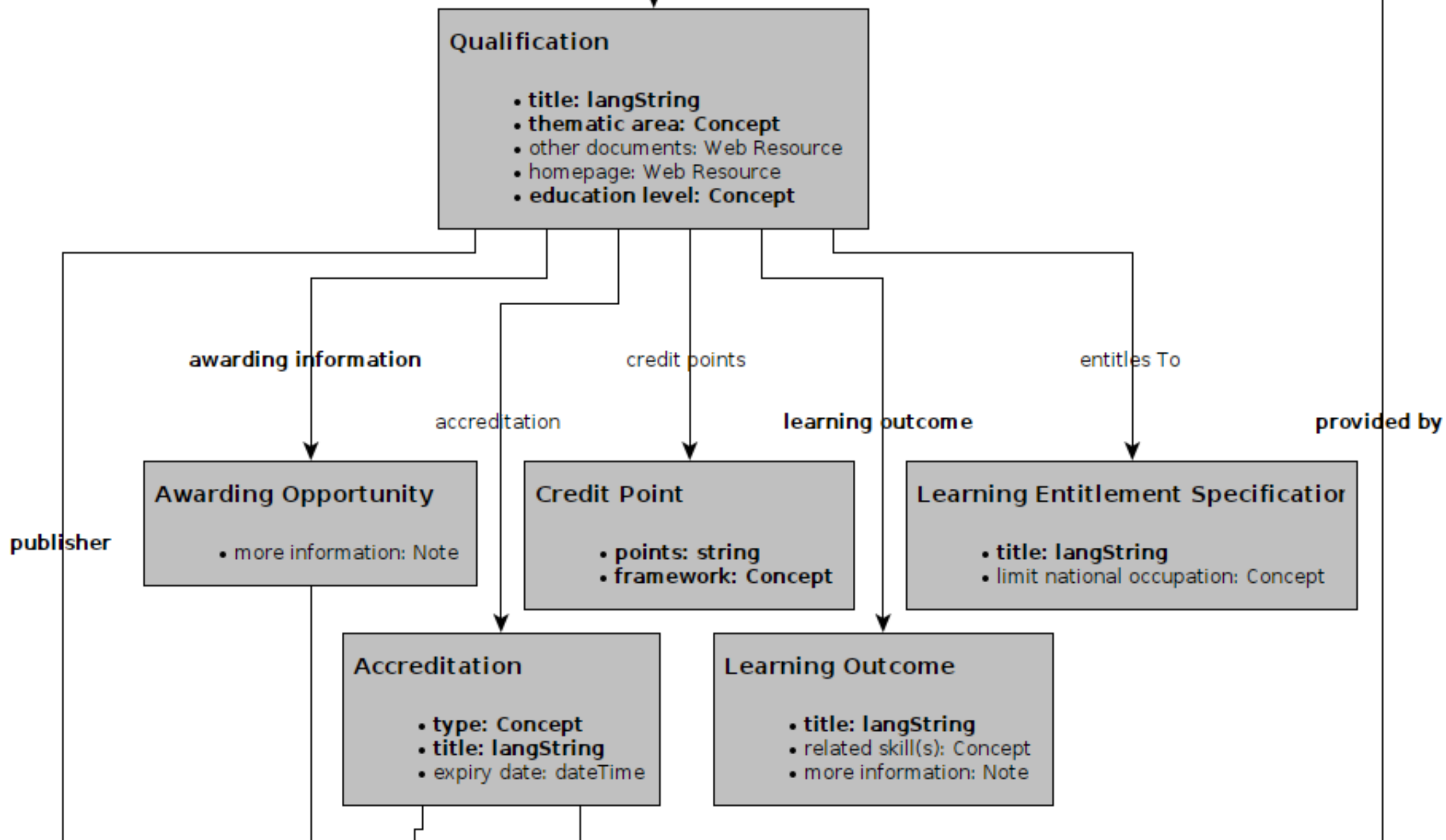
awarding information

credit points

entitles To

accreditation

learning outcome

provided by

Qualification

- **title: langString**
- **thematic area: Concept**
- other documents: Web Resource
- homepage: Web Resource
- **education level: Concept**

awarding information

accreditation

credit points

learning outcome

entitles To

provided by

publisher

Awarding Opportunity

- more information: Note

Credit Point

- **points: string**
- **framework: Concept**

Learning Entitlement Specification

- **title: langString**
- limit national occupation: Concept

Accreditation

- **type: Concept**
- **title: langString**
- expiry date: dateTime

Learning Outcome

- **title: langString**
- related skill(s): Concept
- more information: Note

framework: Concept

limit national occupation: Concept

Accreditation

- **type: Concept**
- **title: langString**
- expiry date: dateTime

Learning Outcome

- **title: langString**
- related skill(s): Concept
- more information: Note

awarding body

accrediting organisation

organisation

Organisation

- **name: langString**

location

Location

- **spatial code: Concept**

Overview of properties

Class	Property	Expected value
Qualification	awarding information	Awarding Opportunity
	education level	ACQF levels
	learning outcome	Learning Outcome
	publisher	Organisation
	thematic area	ISCED-F
	title	String with language
Awarding Opportunity	awarding body or note	Organisation or Note
Learning Opportunity	default language	Language
	provided by	Organisation
	qualification	Qualification
	title	String with language
Learning Outcome	title	String with language
	related skill or note	Skill or Note
Location	spatial code	Location code
Organisation	location	Location
	name	String with language

Controlled lists

- Accreditation.**type** (Controlled List of Accreditation Types)
- Credit Point.**framework** (ACQF Specific)
- Learning Entitlement Specification.**limit national occupation** (ESCO Occupations)
- Learning Opportunity. **default language** (Language Named Authority List)
- Learning Outcome. **related skill** (ESCO Skills)
- Location.**spatial code** (Countries and Territories Authority List)
- Qualification.**educational level** (ACQF Specific)
- Qualification.**thematic area** (ISCED-F 2013)

Open questions

- **Recognition of Prior Learning:** Is it sufficient to indicate a note and link to an external document to capture such information?
- **Thematic area:** Can the link to ISCED-F remain mandatory?
- **Reuse of controlled lists:** How much flexibility is needed in the management of controlled lists?

Q&A: Data Architecture

08

Wrap-up and closure

Thank you for your attention!