

## QE Performance Measure

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### Document Version History

Version	Status	BDS Approval Date	TDS Issue Date	Modified by	Description
1.0	Approved: Recommended	19/08/2015	26/10/2015	ISB	New Standard.
2.0	Approved: Recommended	19/08/2015	26/04/2016	ISB	Correct duplicate element name

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# 1 DATA STANDARD

## 1.1 Introduction

### 1.1.1 Application

This Technical Data Standard (TDS) binds the QE Performance Measure Business Data Standard (BDS) to an XML Schema (XSD) representation.

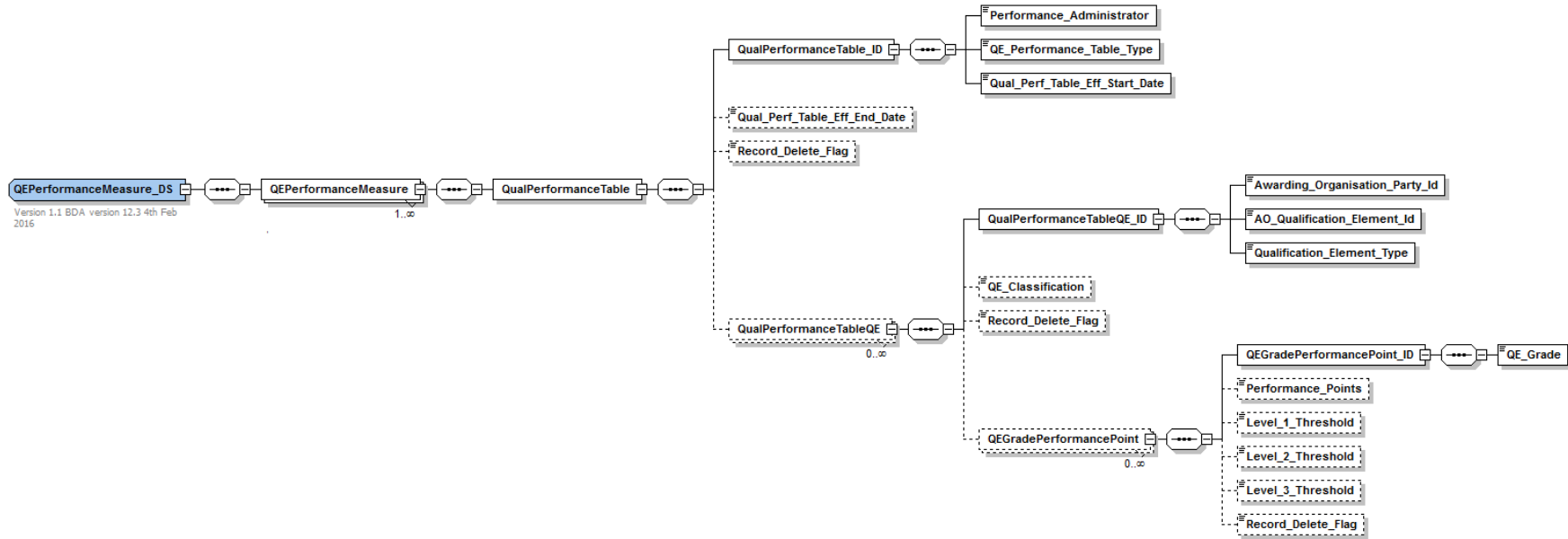
This standard can be used to store or exchange data that identifies the various Qualification Performance Measures used to

- a) Measure a learner's performance in achieving a qualification
- b) Ensure that where a Learner has taken two or more qualifications with an overlap in curriculum, credit is given once

### 1.1.2 Compatibility with non-ISB standards

There are no known compatibility issues related to this standard.

2 XSD



### 3 XSD NORMALISATION

#### 3.1 Introduction

This section defines normalisation that has been applied. The Business Data Standard data model may contain multiple entities that inherit primary keys from a parent entity. In this situation the same primary keys will occur in multiple entities. If this pattern was translated directly to the xsd then the same primary key element(s) would be repeated within the xsd. When parsing the xml, if the element was referenced without xpath then the particular instance of the repeated primary key element could not be determined.

If all instances of the repeated primary key element(s) contained the same value then there would not be an issue. However, if there were different values in the repeated primary key element(s) then the value to be returned would be indeterminate. To prevent this situation the conversion from the Entity Relationship Diagram (ERD) model to the xsd involved normalisation to remove the repetition. This results in nodes being created in the xsd to define primary keys once and sub-nodes created that inherit those keys. This section will identify any normalisation that has taken place and how it has been implemented in the schema.

#### 3.2 Details of Normalisation specific to QE Performance Measure

The QE Performance Measure model is a complex model consisting of:

1. A primary parent entity Qual Performance Table
2. A child entity Qual Performance Table QE which also has a child entity QE Grade Performance Point

All of the entities have compound keys

There are two primary key sets that are normalised as follows:

The entities all inherit the Qual Performance Table primary keys of

- Performance\_Administrator
- QE\_Performance\_Table\_Type
- Qual\_Perf\_Table\_Eff\_Start\_Date

This primary key set is held under the node:

- QualPerformanceTable\_ID

The QE Grade Performance Point entity inherits the additional primary keys of Qual Performance Table QE:

- Awarding\_Organisation\_Party\_Id
- AO\_Qualification\_Element\_Id
- Qualification\_Element\_Type

This primary key set is held under the node QualPerformanceTableQE\_ID

## 4 XSD OPTIMISATION

### 4.1 Introduction

This section defines optimisation that has been applied to the xsd. The Business Data Standard data model may contain compound keys made up from a number of attributes. The sequence of the attributes in the Business Data Standard data model is defined to identify any opportunities for optimisation in encodings that can accommodate that capability.

An example is where the primary key contains the values of Party\_Id and then Event\_Id. This implies that a single Party\_Id may have many Event\_Ids. Encodings that can accommodate optimisation can define the Party\_Id once and then under that have many Event\_Ids. For xml encoding, a single Party\_Id element node can be defined with an unbounded list under that node for the Event\_Ids. This reduces the amount of data redundancy.

### 4.2 Details of Optimisation specific to QE Performance Measure

The QE Performance Measure structure is optimised as follows:

- Under the QualPerformanceTable node there is compound primary key set (1) containing:
  - Performance\_Administrator
  - QE\_Performance\_Table\_Type
  - Qual\_Perf\_Table\_Eff\_Start\_Date
- Under the above primary key set (1) there are multiple instances of QualPerformanceTableQE node that holds the further primary key set (2) containing:
  - Awarding\_Organisation\_Party\_Id
  - AO\_Qualification\_Element\_Id
  - Qualification\_Element\_Type
- Under the above primary key set (2) there are multiple instances of QEDiscountCode node that holds the further primary key set (3) containing:
  - QE\_Classification
- Under the above primary key set (2) there are multiple instances of QEGradePerformancePoint node that holds the further primary key set (4) containing:
  - QE\_Grade

- Therefore
  - for one instance of primary key set (1) there are multiple instances of primary key set (2)
    - for one instance of primary key set (2) there are multiple instances of primary key set (3)
    - for one instance of primary key set (2) there are multiple instances of primary key set (4)

Therefore, the QE Performance Measure has 3 level of optimisation.

### 4.3 Applying the Optimisation within the Application Program Interface

When creating data for the Qual Performance primary keys there are two options available that both satisfy the xsd

- Option 1 – One Performance\_Administrator/QE\_Performance\_Table\_Type/Qual\_Perf\_Table\_Eff\_Start\_Date with many QualPerformanceTableQE
- Option 2 – One Performance\_Administrator/QE\_Performance\_Table\_Type/Qual\_Perf\_Table\_Eff\_Start\_Date with one QualPerformanceTableQE

Option 1 utilises the optimisation as there will be one Qual Performance Table with all of its Qual Performance Table QE.

Option 2 does not use the optimisation and repeats the Qual Performance Table against each of its Qual Performance Table QE.

Providing Option 1 is coded for in the Application then either Option 1 or 2 Option can be supported. However, this is not true if Option 2 only is coded for as the program will not hold the Qual Performance Table in memory for use against each of its Qual Performance Table QE nodes.

The recommendation is always to code for the optimisation method Option 1.

The same optimisation method should be used for the QE Grade Performance Point.



## 5 CHANGES FROM PREVIOUS VERSION

Modify duplicate element QEGradePerformancePoint to be QEGradePerformancePoint\_ID.

## 6 REFERENCES

The following references are specific to this Technical Data Standard:

- ESCS ISB Consolidated XML (XSD) Schema, version 6.2
- ESCS ISB Business Data Architecture Entity Relationship Diagram, version 12.3
- ESCS ISB XML Content model version 1.1
- ESCS ISB, Business Data Standard, QE Performance Measure

The following references apply to all Technical Data Standards:

- ESCS ISB Standards Overview and Context
- ESCS ISB “System“ Enterprise Architecture - Business Data Architecture
- ESCS ISB Business Data Architecture Data Types
- ESCS ISB BDA Data Architecture Modelling Standards
- ESCS ISB Management Process

## 7 NOTES

None.

## 8 COPYRIGHT NOTICE

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