

## Party Relationship Role

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### Document Version History

Version	Status	BDS Approval Date	TDS Issue Date	Modified by	Description
1.0	Approved: Recommended	11/06/2013	13/11/2013	ISB	New TDS
2.0	Approved: Recommended	24/02/2015	27/03/2015	ISB	Removal of element LO_Provider_Party_Id from LearningEnrolmentCohort node.

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# 1 DATA STANDARD

## 1.1 Introduction

### 1.1.1 Application

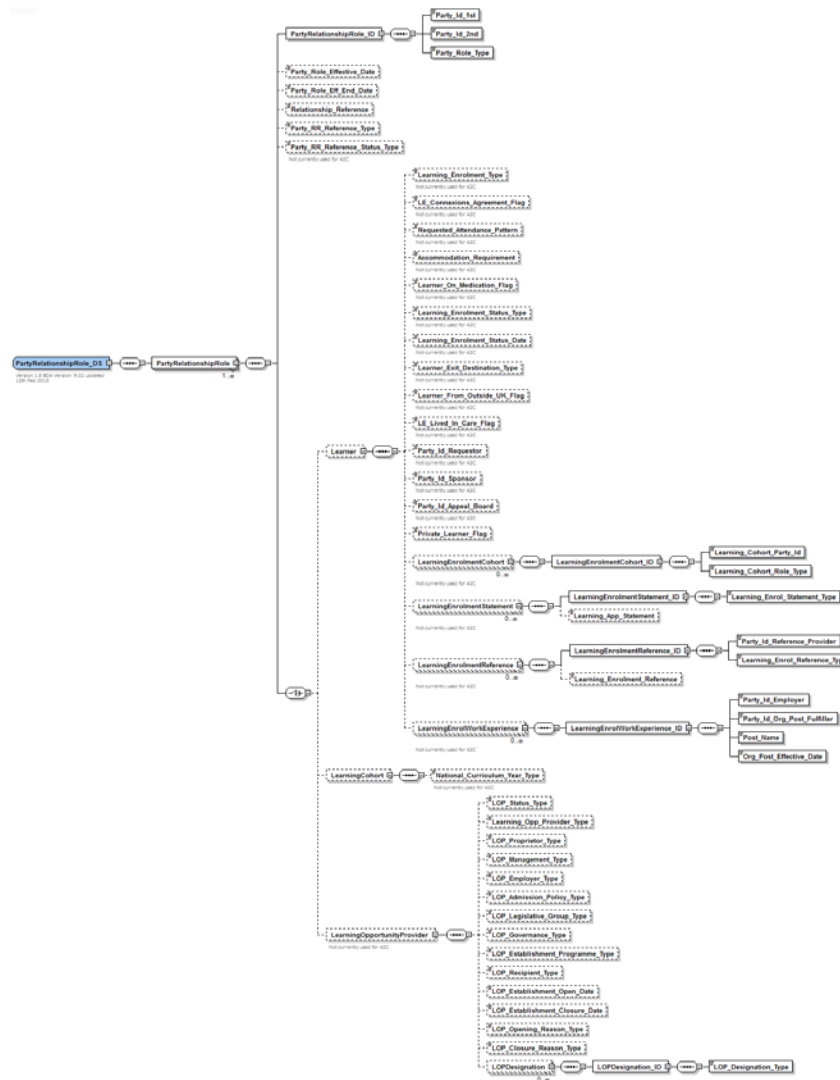
This Technical Data Standard (TDS) binds the Party Relationship Role Business Data Standard (BDS) to an XML Schema (XSD) representation.

This standard can be used to store or exchange data that is consistent between two PARTYs and the specific role regardless of the underlying events that may occur. Data that is consistent for a relationship rather than an event includes LEARNER details, LEARNING OPPORTUNITY PROVIDER details and PARTY identifiers such as ULN, UPN.

### 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 Party Relationship Role

The Party Relationship Role is a complex structure consisting of

- A super/subtype design
- Multiple associate entities

The supertype of Party Relationship Role has a compound key set comprising

- Party\_Id\_1st
- Party\_Id\_2nd
- Party\_Role\_Type

As such an instance of the supertype is always accompanied by a subtype. This results in the primary key above being repeated on each subtype. This is normalised in the schema by creating a single set of mandatory identifying elements under the

PartyRelationshipRole\_ID. The supertype Party Relationship Role entity attributes are defined under the PartyRelationshipRole node. The subtypes of Learner, Awarding Organisation etc are then set as choice nodes so that the result is:

- A single set of identifying elements
- A single set of attributes for the supertype Party Relationship Role
- A choice of Learner, Awarding Organisation etc

In the Business Data Standard (BDS) the primary keys of Party\_Id\_2nd/Party\_Role\_Type are role named onto each subtype eg Party\_Id\_2nd/Party\_Role\_Type is role named as Learner\_Party\_Id/Learner\_Role\_Type in the Learner subtype. This does not need to be applied to the xsd as the Learner\_Party\_Id/Learner\_Role\_Type would have exactly the same value in as in the Party\_Id\_2nd/Party\_Role\_Type fields in the related supertype Party Relationship Role instance. Therefore, the xsd only needs the Party\_Id\_2nd/Party\_Role\_Type to be stated.

Due to the above normalisation, only the subtypes that have additional attributes to the supertype primary key set are stated in the xsd as the containers for the supertypes with no additional attributes would be empty and add no value.

The associate entities all utilise the above Party Relationship Role primary key set of

- Party\_Id\_1st
- Party\_Id\_2nd
- Party\_Role\_Type

Each associate entity adds its specific additional primary keys under the appropriate nodes in the xsd.

## 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 Party Relationship Role

The Party Relationship structure is optimised by having a single instance of Party\_Id\_1st/Party\_Id\_2nd/Party\_Role\_Type under the PartyRelationshipRole node and multiple instances of

- Person\_Party\_Id
- Language\_Type

under the various associate entity nodes.

Associate entities that inherit from a specific Party Relationship Role subtype such as Learning Enrolment Cohort are held under the subtype within the xsd. This does not facilitate optimisation in itself but ensures a pattern that the Learner is required in the xsd before one of its associate entities can be populated.

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

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

- Option 1 – Party\_Id\_1st/Party\_Id\_2nd /Party\_Role\_Type with many associate entity(s)
- Option 2 – One Party\_Id\_1st/Party\_Id\_2nd /Party\_Role\_Type with one instance of each associate entity

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Option 1 utilises the optimisation as there will be one Party Relationship with all its associate entity instances

Option 2 does not use the optimisation and repeats the Party Relationship against a single associate entity(s) instance.

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 Party\_Id\_1st/Party\_Id\_2nd/Party\_Role\_Type set in memory for use against each of its associate entity nodes.

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



## 5 CHANGES FROM PREVIOUS VERSION

Remove element LO\_Provider\_Party\_Id from LearningEnrolmentCohort node.

## 6 REFERENCES

The following references are specific to this Technical Data Standard:

- ESCS ISB Consolidated XML (XSD) Schema, version 2.1
- ESCS ISB Business Data Architecture Entity Relationship Diagram, version 9.02
- ESCS ISB XML Content Model 1.8
- ESCS ISB, Business Data Standard, Party Relationship Role

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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