



Business To Manufacturing Markup Language

B2MML - Personnel

Version 0500 – March 2011

Personnel Schema Documentation



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Change History:

Change	Date	Person	Description
V01	7 April 2002	Dennis Brandl Dave Emerson	Initial release
V02	23 Sept 2003	Dennis Brandl Dave Emerson	<ul style="list-style-type: none">Added Location to person, Changed ##any to "Any" element of type "AnyType"
V03	26 Aug 2005	Dennis Brandl Dave Emerson	<ul style="list-style-type: none">Added substitution groups. One group added just before each Any element.
V0301	29 Dec 2005	Dennis Brandl	<ul style="list-style-type: none">Only changed version to v0301
V04	04 June 2007	Dennis Brandl	<ul style="list-style-type: none">Added transaction elements
V0401	Oct 2008	Dennis Brandl	<ul style="list-style-type: none">Changed Version number
V0500	Mar 2011	Dennis Brandl	<ul style="list-style-type: none">Updated for ISA 95.02-2010Removed ##any elements

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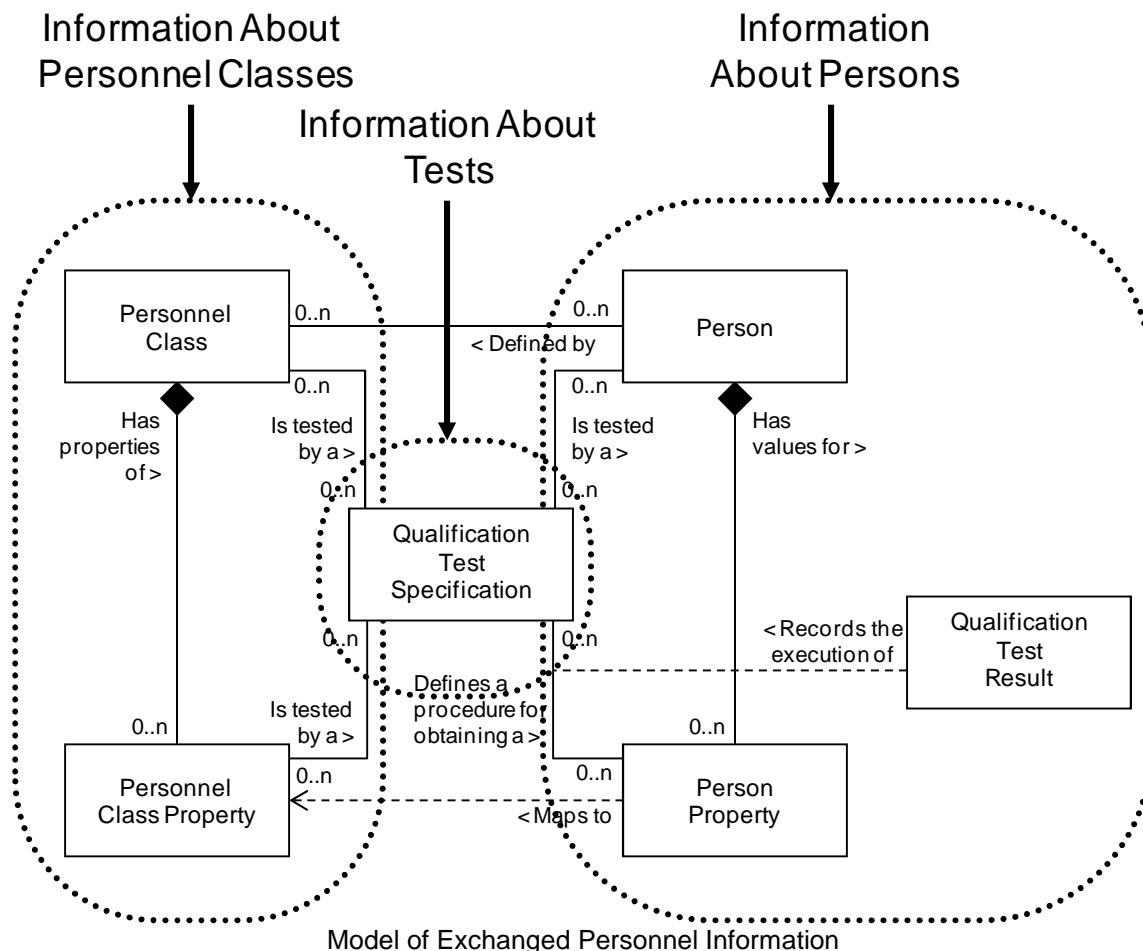
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1 Schema Scope

This document defines the information about persons, personnel class, and qualification tests that may be exchanged between business systems and manufacturing operations systems. This information is based on the data models and attributes defined in the ANSI/ISA 95.00.02 Enterprise/Control System Integration standard. Contact ISA (The Instrumentation, System, and Automation Society) for copies of the standard. Additional information on the standard is available at www.isa.org.

1.1 Key Information Assumptions

The data represented in these schemas is derived from the UML model below. This model is defined in the ANSI/ISA 95.00.02 standard. The information model in the model below is not hierarchical, so the key assumption is that the information may be accessed from any of three starting points: personnel class, person, or qualification test, as identified by the dotted collections in the figure.



This schema uses a common schema for definition of elements that are used in multiple schemas, such as ID, Description, and Value. See the document defining the Common schema for definition of the common elements.



1.2 Key Use Assumptions

The model only defines the exchanged information and does not define the use of the information or encapsulation of the information in any defining transactions.

1.3 PersonnelInformation

The main structuring element of the schema definition is PersonnelInformation. PersonnelInformation contains definitions of personnel classes, persons, and qualification test specifications.

1.4 Person

A person represents a specifically identified individual. A person may be a member of zero or more personnel classes. Person elements may be used to contain information about specific personnel. It may also include the definition of qualification test results. It may include the list of personnel classes the person belongs to and the list of qualification test specifications associated with properties.

1.5 PersonnelClass

A personnel class is a means to describe a grouping of persons with similar characteristics for purposes of scheduling and planning. Any person may be a member of zero or more personnel classes. Examples of personnel classes are "Cook Machine Mechanics", "Slicing Machine Operators", "Cat-Cracker Operator", and "Zipper Line Inspectors".


PersonnelClass information may be used to contain information about personnel classes. It may contain the list of persons belonging to a class and the list of qualification test specifications associated with personnel class properties.

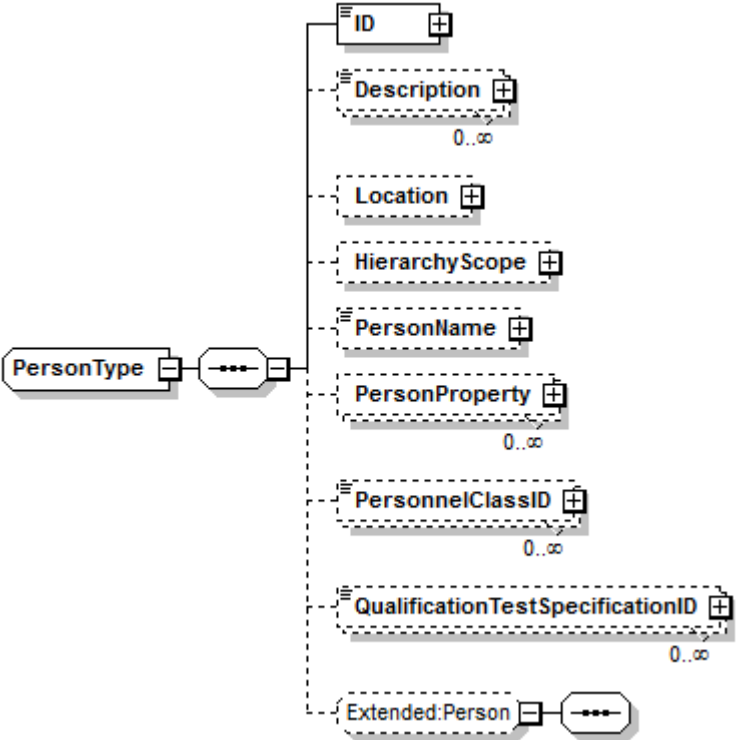
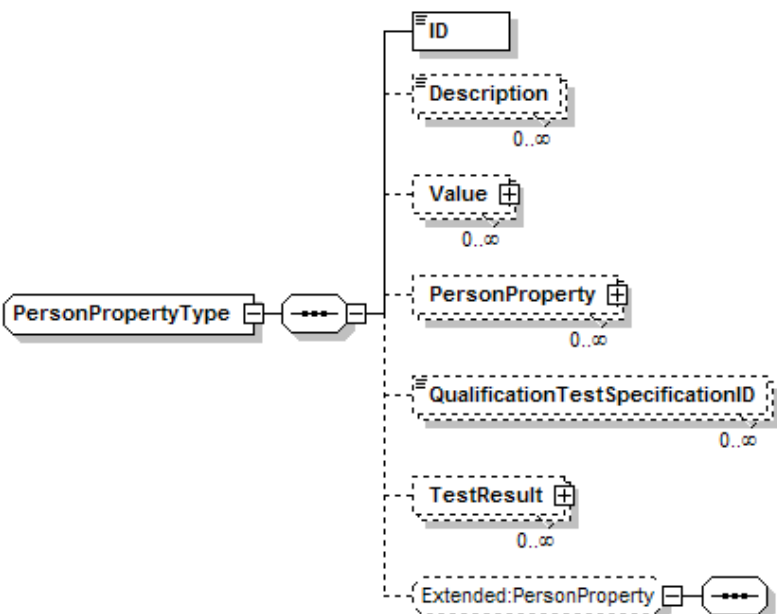
1.6 QualificationTestSpecification

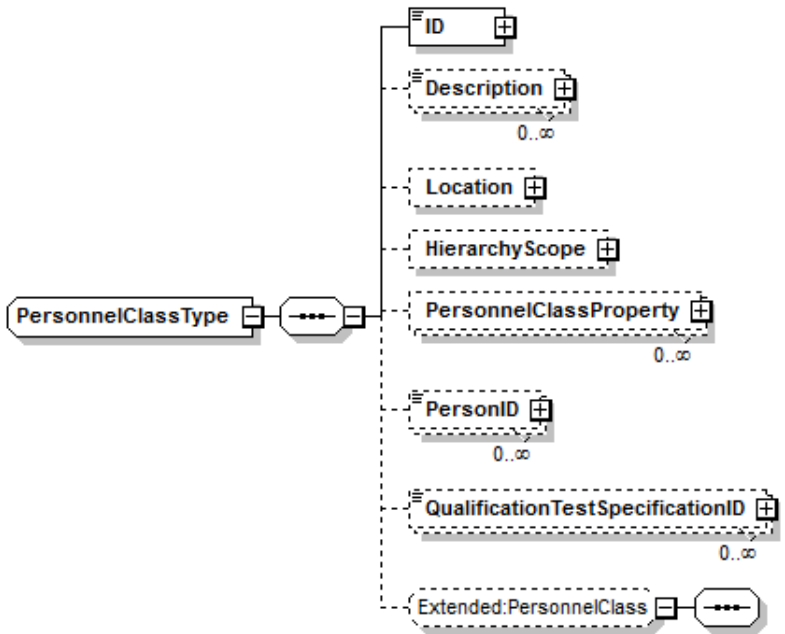
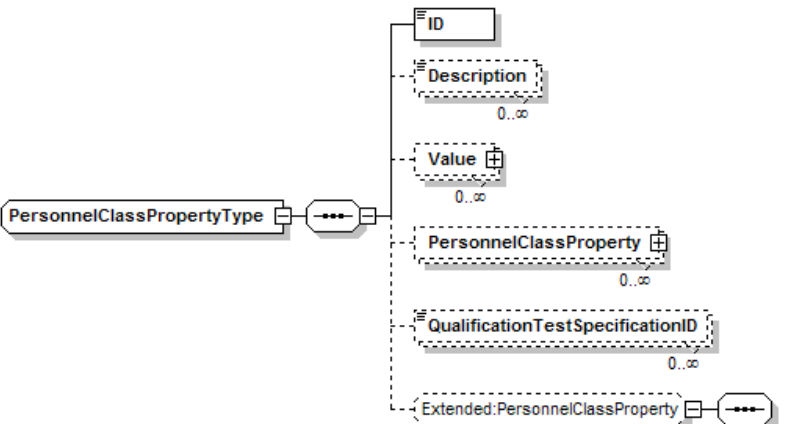
A qualification test specification may be associated with a personnel class property or person property. This is typically used where a qualification test is required to ensure that a person has the correct training and/or experience for specific operations. A qualification test specification may test for one or more properties.

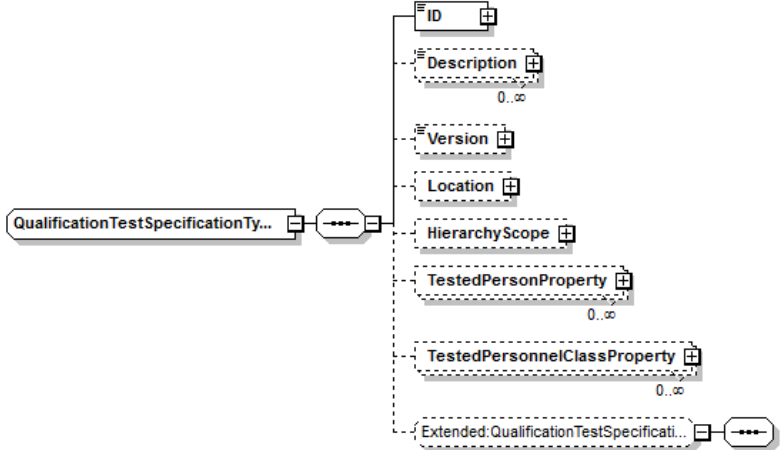
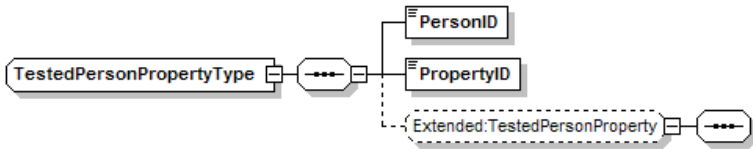
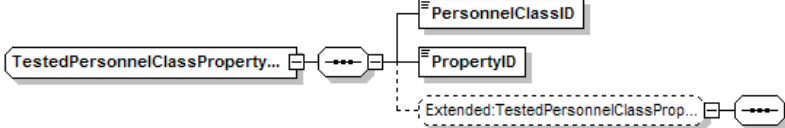
QualificationTestSpecification information may be used to contain information about qualification tests. It may contain identifications of the tested person properties and the tested personnel class properties.

2 Element Definitions

Element/Type	Description
PersonnelInformation PersonnelInformationType	<p>Contains the top level definition of persons, personnel classes, and qualification test specifications.</p> 

Element/Type	Description
Person PersonType	<p>Contains a definition of a person resource, including the ID, name, properties of persons, and the list of personnel classes the person is a member of. May be a top level object.</p>  <pre> classDiagram class PersonType { ID Description Location HierarchyScope PersonName PersonProperty PersonnelClassID QualificationTestSpecificationID Extended:Person } PersonType "1" -- "0..∞" Description PersonType "1" -- "0..∞" Location PersonType "1" -- "0..∞" HierarchyScope PersonType "1" -- "0..∞" PersonName PersonType "1" -- "0..∞" PersonProperty PersonType "1" -- "0..∞" PersonnelClassID PersonType "1" -- "0..∞" QualificationTestSpecificationID PersonType "1" -- "0..∞" Extended:Person </pre>
PersonProperty PersonPropertyType	<p>Contains a definition of a property for a person, including the value for the property, the list of qualification test specifications for the property, and test results for tests of the property.</p>  <pre> classDiagram class PersonPropertyType { ID Description Value PersonProperty QualificationTestSpecificationID TestResult Extended:PersonProperty } PersonPropertyType "1" -- "0..∞" Description PersonPropertyType "1" -- "0..∞" Value PersonPropertyType "1" -- "0..∞" PersonProperty PersonPropertyType "1" -- "0..∞" QualificationTestSpecificationID PersonPropertyType "1" -- "0..∞" TestResult PersonPropertyType "1" -- "0..∞" Extended:PersonProperty </pre>

Element/Type	Description
PersonnelClass PersonnelClassType	<p>Contains a definition of a personnel class resource, including the ID of the class, properties of the personnel class, and the list of persons belonging to the class. May also be a top level object.</p>  <p>The diagram shows a central box labeled PersonnelClassType connected to a vertical list of elements: ID, Description (0..∞), Location, HierarchyScope, PersonnelClassProperty (0..∞), PersonID (0..∞), QualificationTestSpecificationID (0..∞), and Extended:PersonnelClass (0..∞). Each element has a small icon indicating its type (e.g., ID, text, list).</p>
PersonnelClassProperty PersonnelClassPropertyType	<p>Contains a definition of a property for a personnel class, including a nominal value for the property, and the list of qualification test specifications for the property.</p>  <p>The diagram shows a central box labeled PersonnelClassPropertyType connected to a vertical list of elements: ID, Description (0..∞), Value (0..∞), PersonnelClassProperty (0..∞), QualificationTestSpecificationID (0..∞), and Extended:PersonnelClassProperty (0..∞). Each element has a small icon indicating its type (e.g., ID, text, list).</p>

Element/Type	Description
QualificationTestSpecification QualificationTestSpecificationType	Contains a definition of a qualification test specification, including the ID of the test, the version of the test, the list of person properties tested, the list of personnel properties tested, and application specific extensions. May also be a top level object. 
TestedPersonProperty TestedPersonPropertyType	Contains an identification of person property tested, containing the ID of the person and the ID of the property. 
TestedPersonnelClassProperty TestedPersonnelClassPropertyType	Contains an identification of personnel property tested, containing the ID of the personnel and the ID of the property. 

3 Transaction Elements

The following elements are defined to support the ISA 95 Part 5 transactions, using the transaction data types defined in the B2MML-Common.xsd schema.

Personnel Information Elements	Description
GetPersonnellInformation	Get <i>PersonnelClass</i> , <i>Person</i> , and <i>QualificationTestSpecification</i> definitions.
ShowPersonnellInformation	Returned information from the <i>GetPersonnellInformation</i> message.
ProcessPersonnellInformation	Process <i>PersonnelClass</i> , <i>Person</i> , and <i>QualificationTestSpecification</i> definitions.
AcknowledgePersonnellInformation	Returned status from the <i>ProcessPersonnellInformation</i> message.
ChangePersonnellInformation	Change <i>PersonnelClass</i> , <i>Person</i> , and <i>QualificationTestSpecification</i> definitions.
RespondPersonnellInformation	Returned status from the <i>ChangePersonnellInformation</i> message.
CancelPersonnellInformation	Cancel <i>PersonnelClass</i> , <i>Person</i> , and <i>QualificationTestSpecification</i> definitions.
SyncPersonnellInformation	Published <i>PersonnelClass</i> , <i>Person</i> , and <i>QualificationTestSpecification</i> definitions.

Personnel Class Elements	Description
GetPersonnelClass	Get <i>PersonnelClass</i> definitions.
ShowPersonnelClass	Returned information from the <i>GetPersonnelClass</i> message.
ProcessPersonnelClass	Process <i>PersonnelClass</i> definitions.
AcknowledgePersonnelClass	Returned status from the <i>ProcessPersonnelClass</i> message.
ChangePersonnelClass	Change <i>PersonnelClass</i> definitions.
RespondPersonnelClass	Returned status from the <i>ChangePersonnelClass</i> message.
CancelPersonnellClass	Cancel <i>PersonnelClass</i> definitions.
SyncPersonnelClass	Published <i>PersonnelClass</i> definitions.

Person Elements	Description
GetPerson	Get <i>Person</i> definitions.
ShowPerson	Returned information from the <i>GetPerson</i> message.
ProcessPerson	Process <i>Person</i> definitions.
AcknowledgePerson	Returned status from the <i>ProcessPersonn</i> message.
ChangePerson	Change <i>Person</i> definitions.
RespondPerson	Returned status from the <i>ChangePerson</i> message.
CancelPerson	Cancel <i>Person</i> definitions.
SyncPerson	Published <i>Person</i> definitions.

QualificationTestSpecification Elements	Description
GetQualificationCapabilityTestSpecification	Get <i>QualificationTestSpecification</i> definitions.
ShowQualificationCapabilityTestSpecification	Returned information from the <i>GetQualificationCapabilityTestSpecification</i> message.
ProcessQualificationCapabilityTestSpecification	Process <i>QualificationTestSpecification</i> definitions.
AcknowledgeQualificationCapabilityTestSpecification	Returned status from the <i>ProcessQualificationCapabilityTestSpecification</i>



QualificationTestSpecification Elements	Description
	message.
ChangeQualificationCapabilityTestSpecification	Change <i>QualificationTestSpecification</i> definitions.
RespondQualificationCapabilityTestSpecification	Returned status from the <i>ChangeQualificationCapabilityTestSpecification</i> message.
CancelQualificationCapabilityTestSpecification	Cancel <i>QualificationTestSpecification</i> definitions.
SyncQualificationCapabilityTestSpecification	Published <i>QualificationTestSpecification</i> definitions.

4 Diagram Convention

The schema diagrams using the following convention to illustrate the structure of the schema elements, the type of the elements and attributes, and the rules for optional elements and repetition.

