IMS Question and Test Interoperability Results Reporting

Version 2.1 Public Draft Specification

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Caution: this specification is incomplete in its current state. The IMS QTI project group is in the process of evolving this specification based on input from market participants. Suppliers of products and services are encouraged to participate by contacting Mark McKell at mmckell@imsglobal.org. This specification will be superseded by an updated release based on the input of the project group participants.

Please note that supplier's claims as to implementation of QTI v2.1 and conformance to it HAVE NOT BEEN VALIDATED by IMS GLC. While such suppliers are likely well-intentioned, IMS GLC member organizations have not yet put in place the testing process to validate these claims. IMS GLC currently grants a conformance mark to the Common Cartridge profile of QTI v1.2.1. The authoritative source of products and services that meet this conformance is contained in the IMS online product directory http://www.imsglobal.org/ProductDirectory/directory.cfm

Thank you for your interest in and support of IMS QTI.

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2. References

IMS_LIP

     IMS Learner Information Package Specification, Version 1.0
     http://www.imsglobal.org/profiles/index.html

3. Assessment Result

Class : `assessmentResult`

An Assessment Result is used to report the results of a candidate's interaction with a test and/or one or more items attempted. Information about the test is optional, in some systems it may be possible to interact with items that are not organized into a test at all. For example, items that are organized with learning resources and presented individually in a formative context.

Contains : context [1]

Contains : testResult [0..1]
When a test result is given the following item results must relate only to items that were selected for presentation as part of the corresponding test session. Furthermore, all items selected for presentation should be reported with a corresponding itemResult.

Contains : itemResult [*]
A summary report for a test is represented by an assessment result containing a testResult but no itemResults.

Class : `context`

Associated classes:
     assessmentResult

Contains : sessionIdentifier [*]
The system that creates the result (for example, the test delivery system) should assign a session identifier that it can use to identify the session. Subsequent systems that process the result might assign their own identifier to the session which should be added to the context if the result is modified and exported for transport again.

Contains : identification [0..1]

Class : `sessionIdentifier`

Associated classes:
     context

Attribute : `sourceID [1]:` uri
A unique identifier of the system which added this identifier to the result.

Attribute : `identifier [1]:` string
The system that creates the report should add a session identifier. Subsequent systems that process the results might use their own identifier for the session and should add this too if the result is exported again for further transport.

Class : identification

Associated classes:
      context

The format of the information used to identify the candidate is defined by the [IMS_LIP].

Class : testResult

Associated classes:
      assessmentResult

Attribute : identifier [1]: string
The identifier of the test for which this is a result.

Attribute : datestamp [1]: datetime
The date stamp of when this result was recorded.

Contains : itemVariable [*]
The values of the test outcomes *and* any durations that were tracked during the test. Note that durations are reported as built-in test-level response variables with name *duration*. The duration of individual test parts or sections being distinguished by prefixing them with the associated identifier as described in Assessment Test, Section and Item Information Model.

Class : itemResult

Associated classes:
      assessmentResult

The result of an item session is reported with an itemResult. A report may contain multiple results for the same instance of an item representing multiple attempts, progression through an adaptive item, or even more detailed tracking. In these cases, each item result must have a different datestamp.

Attribute : identifier [1]: string
The identifier of the item for which this is a result. For item results that are reported as part of a test result this is the identifier used to refer to the item in the test (see assessmentItemRef). For item results that are reported on their own, this can be any suitable identifier for the item. Where possible, the value should match the identifier attribute on the associated assessmentItem.

Attribute : sequenceIndex [0..1]: integer
For item results that are reported as part of a test, this attribute must be used to indicate the position of the item within the specific instance of the test. The first item of the first part of the test is defined to have sequence index 1.

Attribute : datestamp [1]: datetime
The date stamp of when this result was recorded.

Attribute : `sessionStatus [1]`: sessionStatus
The session status is used to interpret the values of the item variables. See sessionStatus below.

Contains : itemVariable [*]
During the item session the delivery engine keeps track of the current values assigned to all itemVariables. The values of including the values of the built-in variables *numAttempts*, *duration*, and *completionStatus*. Each value is represented in the report by an instance of itemVariable.

Contains : candidateComment [0..1]
An optional comment supplied by the candidate (see allowComment).

Enumeration: `sessionStatus`

The session status is used to keep track of the status of the item variables in an item session.

`initial`
The value to use for sessions in the initial state, as described above. This value can only be used to describe sessions for which the response variable *numAttempts* is 0. The values of the variables are set according to the rules defined in the appropriate declarations (see responseDeclaration, outcomeDeclaration and templateDeclaration).

`pendingSubmission`
The value to use when the item variables represent a snapshot of the current values during an attempt (in other words, while interacting or suspended). The values of the response variables represent work in progress that has not yet been submitted for response processing by the candidate. The values of the outcome variables represent the values assigned during response processing *at the end of the previous attempt* or, in the case of the first attempt, the default values given in the variable declarations.

`pendingResponseProcessing`
The value to use when the item variables represent the values of the response variables after submission but before response processing has taken place. Again, the outcomes are those assigned at the end of the previous attempt as they are awaiting response processing.

`final`
The value to use when the item variables represent the values at the end of an attempt *after* response processing has taken place. In other words, after the outcome values have been updated to reflect the values of the response variables.

Abstract class : `itemVariable`

Derived classes:
　　　`outcomeVariable`, `responseVariable`, `templateVariable`
Associated classes:
　　　`itemResult`, `testResult`

Attribute : `identifier [1]`: identifier
The purpose of an itemVariable is to report the value of the item variable with the given identifier.

Attribute : `cardinality [1]`: cardinality
The cardinality of the variable, taken from the corresponding declaration or definition.

Attribute : `baseType [0..1]`: baseType
The base type of the variable, taken from the corresponding declaration of definition. This value is omitted only for variables with record cardinality.

Class : `responseVariable` (itemVariable)

Attribute : `choiceSequence [*]`: identifier
When a response variable is bound to an interaction that supports the shuffling of choices, the sequence of choices experienced by the candidate will vary between test instances. When shuffling is in effect, the sequence of choices should be reported as a sequence of choice identifiers using this attribute.

Contains : correctResponse [0..1]
The correct response may be output as part of the report if desired.

Contains : candidateResponse [1]
The response given by the candidate.

Class : `candidateResponse`

Associated classes:
  `responseVariable`

Contains : value [*]
The value(s) of the response variable. A NULL value, resulting from no response, is indicated by the absence of any value.

Class : `outcomeVariable` (itemVariable)

Attribute : `view [*]`: view
The views (if any) declared for the outcome must be copied to the report to enable systems that render the report to hide information not relevant in a specific situation. If no values are given, the outcome's value should be considered relevant in all views.

Attribute : `interpretation [0..1]`: string
See interpretation.

Attribute : `longInterpretation [0..1]`: uri
See longInterpretation.

Attribute : `normalMaximum [0..1]:` [float](#)
Taken from the corresponding [outcomeDeclaration](#).

Attribute : `normalMinimum [0..1]:` [float](#)
Taken from the corresponding [outcomeDeclaration](#).

Attribute : `masteryValue [0..1]:` [float](#)
If a mastery value is specified in the corresponding [outcomeDeclaration](#) it may be reported alongside the value of the [outcomeVariable](#). In some cases, the mastery value may not be an attribute of the item itself, but be determined by the context in which the item is delivered, for example, by examining the candidates in a specific cohort. The mastery value may be reported with the outcome value even when there is no corresponding value in the declaration.

Contains : [value](#) [*]
The value(s) of the outcome variable.

Class : `templateVariable` ([itemVariable](#))

Contains : [value](#) [*]
The value(s) of the template variable.

Class : `candidateComment`

Associated classes:
     [itemResult](#)

The class used for comments from the candidate. A simple run of text.

About This Document

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