Response Domains

Wendy and Knut based on earlier work of Barry, Dan S., and Kelly

# Goals:

1. Each response domain captures one and only one response
2. Response domain needs to define what is being captured (number, string, image position, binary, audio/visual position, etc.)
3. Response domains do not need to be reusable
4. Description of the capture process should be reusable (scales, validity statements, etc.)
5. The response domain has a related Represented Variable (cardinality?)
6. Users of question banks (Represented Questions only) need to be able to follow existing links back to the source Represented Question
7. Represented Variables need to be able to express Sentinel Value Domains

Led by the discussions of week 1 and week 2 sprints the following solution is being proposed by Wendy and Knut. It addresses each of the goals above focusing on continued reusability of capture tasks which can be complex and are often the subject of testing, restriction of a response domain to the capture of a single response (not an array or set of responses), and ensuring the ability to track links back from a Represented Variable to a Represented Question via the Response Domain. Note that naming of these classes is only a suggestion. We were confusing ourselves when saying “response domain” so renamed the new class for discussion clarity.

# Current structure of Represented Question:

Extension base: Annotated Identifiable

Properties

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Cardinality | Data type | Documentation |
| name | 0..n | Name  | A name for the measurement. A linguistic signifier. Human understandable name (word, phrase, or mnemonic) that reflects the ISO/IEC 11179-5 naming principles. If more than one name is provided provide a context to differentiate usage.  |
| displayLabel | 0..n | DisplayLabel  | A structured display label providing a fully human readable display for the identification of the object. Supports the use of multiple languages and structured text. |
| usage | 0..1 | InternationalStructuredString  | Explanation of the ways in which some decision or object is employed. Supports the use of multiple languages and structured text. |
| purpose | 0..1 | InternationalStructuredString  | A description of the purpose or use of the Measurement. May be expressed in multiple languages and supports the use of structured content.  |
| source | 0..1 | ExternalControlledVocabularyEntry  | The source of a capture structure defined briefly; typically using an external controlled vocabulary |
| analysisUnit | 0..n | ExternalControlledVocabularyEntry  | Identifies the unit being analyzed such as a Person, Housing Unit, Enterprise, etc.  |
| questionText | 0..n | DynamicText | The text of the question which may be literal or dynamic (altered to personalize the question text) in terms of content. |
| questionIntent | 0..1 | InternationalStructuredString | The purpose or intent of the question. |
| estimatedResponse TimeInSeconds | 0..1 | xs:decimal | An estimation of the number of seconds required to respond to the question. Used for estimating overall questionnaire completion time. |

Relationships:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Target class | Documentation | Source | Target | Type |
| hasResponseDomain | ResponseDomain  |  | 0..n | 0..n | Aggregation |
| hasConcept | Concept  | Capture has a Concept | 0..n | 0..n | Neither |
| hasInstruction | Instruction  | Capture has an Instruction | 0..n | 0..n | Aggregation |
| hasExternalAid | ExternalAid  | Capture has an External Aid | 0..n | 0..n | Aggregation |
| hasRepresentedVariable | RepresentedVariable | An optional link to a represented variable which can be used by each instance variable created by a use of this question. | 0..n | 0..n | Neither |

# Proposed changes:

1. Remove relationship hasResponseDomain
2. Remove relationship to RepresentedVariable
3. Add property whose target is a Response Capture, a non-reusable description of what is being captured (see details below)
4. Add relationship whose target is a Response Task, a reusable description of the capture task (see details below)

RepresentedQuestion

* + Properties
		- QuestionText
		- ...
		- ResponseCapture
	+ Relationship
		- ResponseTask

ResponseCapture - complex data type not reusable

* typeOfCapture [string | numeric | binary | spatial mark | code | sound/audio | physical act (recorded in some like picture, machine capture (clicker) | etc.]
* datatype
* precision
* forCaptureObject target=[category | codelist | category set | image | sound | video | action] assumption that the object or a description/exteral material has a DDI identifier] 1..1
* intendedToPopulate target=RepresentedVariable 0..n

ReponseTask - abstract base, reusable

* name
* hasResponseObject 0..n target=ResponseObject [codelist, categoryset, see above] -- note labels for response capture such as a numeric for the question how old are you "\_\_\_\_\_ years" means that "years" should be created as a response object
* [set conditions - subtype activity like scale, etc.]
* validationRule 0..n [type needs to be discussed, at minimum InternationalString]

# Examples:

RQ using a Likert Scale

* QuestionText
* ResponseCapture: single number
	+ ResponseObject: overall scale
	+ RepresentedVariable: single numeric within a specified range
* ResponseTask: Likert Scale
	+ ResponseObject: position on the scale

OR

* QuestionText
* ResponseCapture: text
	+ ResponseObject: overall scale
	+ RepresentedVariable: single text within a specified range
* ResponseTask: Likert Scale
	+ ResponseObject: position on the scale

RQ using a numeric [Age in years]

* QuestionText
* ResponseCapture: single number
	+ ResponseObject: overall scale
	+ RepresentedVariable: single numeric within a specified range

OR

* QuestionText
* ResponseCapture: single number
	+ ResponseObject: overall scale
	+ RepresentedVariable: single numeric within a specified range
* ResponseTask:
	+ Set validations (age range)

Possible answers in the task capture specifics in the capture

* + In a scale the following would be in the task:
		- valid range
		- cardinality of responses (1..n, 1..1)
	+ response domain
		- Numeric: set detailed type (xs:integer, xs:decimal, etc.)
		- precision