Minim definition for workflow experiment

The entries in this Minim checklist definition have been assembled to demonstrate the use of Research Objects and checklist evaluation used to assist the construction of a documented, sharable workflow-based experiment.

Prefixes:

Prefix	URI
rdf	http://www.w3.org/1999/02/22-rdf-syntax-ns#
rdfs	http://www.w3.org/2000/01/rdf-schema#
owl	http://www.w3.org/2002/07/owl#
xsd	http://www.w3.org/2001/XMLSchema#
xml	http://www.w3.org/XML/1998/namespace
rdfg	http://www.w3.org/2004/03/trix/rdfg-1/
ore	http://www.openarchives.org/ore/terms/
ao	http://purl.org/ao/
dcterms	http://purl.org/dc/terms/
ro	http://purl.org/wf4ever/ro#
minim	http://purl.org/minim/minim#
roterms	http://purl.org/wf4ever/roterms#

Checklists:

Target	Purpose	Model	Description
{+targetro}	complete	#model_complete	Checklist for complete workflow experiment RO

Model: #model_complete — Model for testing completeness of workflow experiment RO

Items:

	Level	Rule	
req_01	SHOULD	#req_research_question	Require research question to be defined
req_02	SHOULD	#req_article	Require article or other resource describing topic of research
req_03	SHOULD	#req_design_sketch	Require workflow design sketch to be present
req_04	MUST	#req_workflow_description	Require workflow description (wfdesc)
req_05	MUST	#req_workflow_definition	Require workflow definition
req_06	MUST	#req_dependencies	Require workflow dependency description(s)
req_07	MUST	#req_live_web_service	Require web service to respond to HTTP request
req_08	SHOULD	#req_sample_data	Require example workflow run with data
req_09	MUST	#req_selected_inputs	Require input data specified for workflow run
req_10	MUST	#req_results_run	Require workflow result generation run to be present
req_11	MUST	#req_conclusion	Require conclusion to be present

Define rules to test individual requirements

Rule: #req_research_question

> **Exists:** ?res rdf:type roterms:ResearchQuestion

	Pass:	Research question is indicated	
	Fail:	Research question is not indicated	

Rule: #req_article
       Exists: ?res rdf:type roterms:Paper
       Pass: General topic description is indicated
       Fail: General topic description is not indicated

Rule: #req_design_sketch
       Exists: ?res rdf:type roterms:Sketch
       Pass: Design sketch is indicated
       Fail: Design sketch is not indicated

Rule: #req_workflow_description
       Exists: ?wf rdf:type wfdesc:Workflow   *Require at least one workflow resource with label*
                   ; rdfs:label ?label
       Pass: Workflow description metadata is present
       Fail: Workflow description metadata is not present

Rule: #req_workflow_definition
       ForEach: ?wf rdf:type wfdesc:Workflow
                   ; rdfs:label ?wflab
                   ; wfdesc:hasWorkflowDefinition ?wfdef
       ResultMod: ORDER BY ?wflab   *To ensure consistent failure reporting*
       IsLive: {+wfdef}
       Pass: All referenced workflow definitions are accessible
       Fail: Workflow definition %(wfdef)s for %(wflab)s is not accessible
       None: No workflow definitions found

Rule: #req_dependencies
       ForEach: ?wf rdf:type wfdesc:Workflow
                   ; rdfs:label ?wflab
       ResultMod: ORDER BY ?wflab
       Exists: ?wf roterms:requiresSoftware ?anything *Or maybe require an rdfs:label?*
       Pass: No workflow software dependencies indicated for %(wflab)s
       Fail: Workflow software dependencies indicated for all workflows

Rule: #req_live_web_service   *Require all workflow services referenced are live*
       ForEach: ?wf rdf:type wfdesc:Process
                   ; rdfs:label ?wflab
                   ; wf4ever:wsdlURI ?wfservice
       ResultMod: ORDER BY ?wflab   *To ensure consistent failure reporting*

IsLive:	{+wfservice}	
Pass:	All referenced workflow services are accessible	
Fail:	Workflow service %(wfservice)s for %(wflab)s is not accessible	
None:	No workflow services found	

Rule: #req_sample_data

ForEach: ?wf rdf:type wfdesc:Workflow
     ; rdfs:label ?wflab

ResultMod: ORDER BY ?wflab

Exists: ?wfrun rdf:type wfprov:WorkflowRun,   *Sample data is provenance of sample WF run. Can dig in*
          roterms:ExampleRun ;   *deeper to check for existence of sample data files*
      wfprov:describedByWorkflow ?wf

Pass: Workflow selected input data indicated for all workflows

Fail: No workflow selected input data indicated for %(wflab)s

Rule: #req_selected_inputs

ForEach: ?wf rdf:type wfdesc:Workflow
     ; rdfs:label ?wflab

ResultMod: ORDER BY ?wflab

Exists: ?wfrun rdf:type wfprov:WorkflowRun,   *Input data is (pretend) provenance of prospective WF run.*
          roterms:ProspectiveRun ;   *@@This approach is tentative, and may be changed later.*
      wfprov:describedByWorkflow ?wf

Pass: Workflow selected input data indicated for all workflows

Fail: No workflow selected input data indicated for %(wflab)s

Rule: #req_results_run

ForEach: ?wf rdf:type wfdesc:Workflow
     ; rdfs:label ?wflab

ResultMod: ORDER BY ?wflab

Exists: ?wfrun rdf:type wfprov:WorkflowRun,
           roterms:ResultGenerationRun ;
      wfprov:describedByWorkflow ?wf

Pass: Workflow results data run indicated for all workflows

Fail: No workflow results data run indicated for %(wflab)s

Rule: #req_conclusion

Exists: ?res rdf:type roterms:Conclusions

Pass: Experiment conclusions are indicated

Fail: Experiment conclusions are not indicated

End: