

A2. Open Information Linking for Environmental science research infrastructures

The attributes marked with a * are confidential and should not be disclosed outside the service provider.

Service overview																									
Service name	Open Information Linking for Environmental science research infrastructures (OIL-E)																								
Service area	data																								
Service phase	alpha																								
Service description	OIL-E is a developing framework for addressing the semantic linking requirements of environmental science e-RIs. Specifically, it is intended to provide a machine-readable bridge between the ENVRI Reference Model and other concept models related to research infrastructure, architecture and scientific (meta)data.																								
Customer group	RI data engineers/architects																								
User group	Data-driven researchers																								
Value	OIL-E is intended to provide technical and methodological guidance for the linking of different controlled vocabularies in order to help the construction of cross-cutting services.																								
Tagline	Open linking between environmental science RI reference modelling and controlled vocabularies.																								
Features	<ul style="list-style-type: none">• Captures ENVRI RM as a multi-viewpoint OWL ontology for RI architecture.• Permits analysis and comparison of RI characteristics as the foundation for an ENVRI Knowledge Base.• Provides a linking framework for describing the different metadata schemes and technologies used by RIs as well as to identify any semantic mappings available to convert between schemes.																								
Service options	<table><tr><th>Option</th><th>Name</th><th>Description</th><th>Attributes</th><th></th></tr><tr><td>1</td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td></td><td></td><td></td><td></td></tr></table>					Option	Name	Description	Attributes		1					2					3				
Option	Name	Description	Attributes																						
1																									
2																									
3																									
Access policies	Wide access																								
Service management information																									
Service owner *	Paul Martin																								
Contact (internal) *	p.w.martin@uva.nl																								
Contact (public)																									

Request workflow *	<pre>graph TD RI_arch[RI architects] --> Q1{Modelled your RI using ENVRI RM?} SM[Semantic modellers] --> Q2{Want to augment a knowledge graph with ENVRI RM concepts?} TD[Tool developers] --> Q3{Want to describe a semantic mapping from your controlled vocabulary to ENVRI RM?} Q1 -- Yes --> Q4{Want to formally publish your RI specification for discovery, query and/or comparison?} Q1 -- No --> Q5{Want to compare your RI design against a standard model for environmental RIs?} Q2 -- Yes --> Q6{Want to extend ENVRI RM with classifiers and rules from an existing ontology?} Q2 -- No --> Q5 Q3 -- Yes --> Q7{Want to develop tools for building RI specifications that is programmatically verifiable from a formal specification?} Q3 -- No --> Q6 Q4 -- Yes --> O1[Use OIL-E to structure your RI reference architecture.] Q4 -- No --> O2[No particular benefit from encoding in OIL-E.] Q5 -- Yes --> O3[Map data into OIL-E framework] Q5 -- No --> O2 Q6 -- Yes --> O4[No need to map to OIL-E.] Q6 -- No --> O5[OIL-E will not benefit your tool implementation.] Q7 -- Yes --> O6[Use OIL-E as internal data model] Q7 -- No --> O5 style O1 fill:#90EE90 style O2 fill:#F08080 style O3 fill:#90EE90 style O4 fill:#F08080 style O5 fill:#F08080 style O6 fill:#90EE90</pre>															
Service request list	<ul style="list-style-type: none">Specifications: http://www.oil-e.net/Published RDF															
Terms of use																
SLA(s)																
Other agreements																
Support unit	email support: Paul Martin (p.w.martin@uva.nl), Zhiming Zhao (z.zhao@uva.nl) open for new test data and test queries															
User manual	online accessible documentation via http://www.oil-e.net/ .															
Service architecture																
Service components	TRL3–4development on-going. <table><tr><th>#</th><th>Type</th><th>Name</th><th>Description</th><th>TRL [1]</th></tr><tr><td>1</td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td></td><td></td></tr></table>	#	Type	Name	Description	TRL [1]	1					2				
#	Type	Name	Description	TRL [1]												
1																
2																
Finances & resources																
Payment model(s)	Free															
Pricing																
Cost *	The sustainability of the ENVRI RM ontology in OIL-E is partially tied to the sustainability of ENVRI RM itself. Application of OIL-E, e.g. for the ENVRI Knowledge Base, creates a community of use for ontologies. Publication of OIL-E in ontology repositories also increases exposure and provides limited curation tied to lifespan of repository.															
Revenue stream(s) *																
Action required																

[1] Technology Readiness Levels (TRL) are a method of estimating technology maturity of components during the acquisition process. For non-technical components, you can specify “n/a”. For technical components, you can select them based on the following definition from the EC:

- TRL 1 – basic principles observed
- TRL 2 – technology concept formulated
- TRL 3 – experimental proof of concept

- **TRL 4** – technology validated in lab
- **TRL 5** – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- **TRL 6** – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- **TRL 7** – system prototype demonstration in operational environment
- **TRL 8** – system complete and qualified
- **TRL 9** – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies)