

Ontohub API

concept and considerations



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general notes

- API should be RESTful
- API should be specified
- API should naturally integrate with ontohub

Specification

- Generating specification from Code
- Domain Specific Language (DSL) to define API-signature
 - ▶ Signature consists of three components
 - object-identifier (iri of ontology, symbol, ...)
 - command (e.g. consistency-check, proof)
 - parameters to command
 - response type (MIME + JSON Schema-Reference)
 - ▶ DSL attaches to callbacks which perform the actions
 - ▶ DSL produces WADL-specification on request

Web Application Description Language - WADL

- W3C Submission (2009) (Hadley)
- XML-based Language to define REST-APIs
- We use JSON-Schema (JSON) instead of proposed RelaxNG (XML)

Components

- Ontology-Interaction
- Search
- Federation

IRI

- ontohub-iri → Linked Open Data (LOD, (Berners-Lee)) compliant
 - ▶ Identifier
 - ▶ Locator
- Attach API to IRI
 - ▶ **http:**
`//ontohub.org/dol-testing/double_import_`
`blendoid?DIB-CommonSource;API-Commands`

Objects?

- are *Resources* (in the **REST** (Fielding, 2000) sense)
- have an `ontohub-iri` assigned

relevant objects

- Ontology
 - ▶ Child-Ontologies (CASL, DOL)
 - ▶ Mappings
 - ▶ Sentences
 - ▶ Symbols
- (Other Files)

What is not an object?

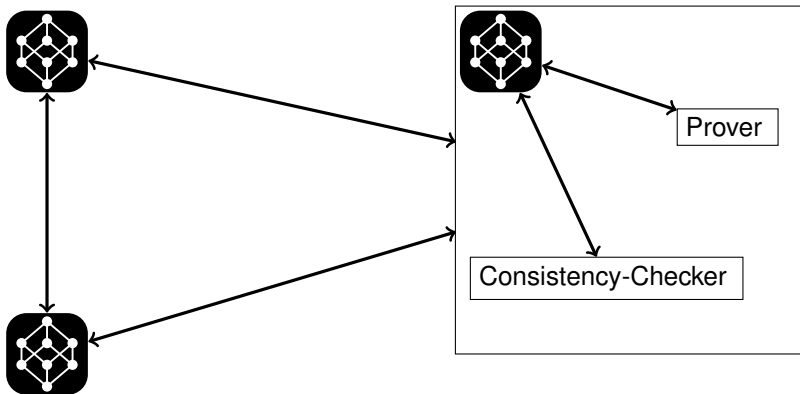
are *Resources* too

- Images (e.g. Mapping-Graphs)
- (Other Files)
- (more general) responses to queries
 - ▶ search results
 - ▶ proof results
 - ▶ consistency-check results

ontologysearch

- Use ontologies for searching
- extension of the Ontology Metadata Vocabulary (OMV)
- individuals of this ontology are used to describe a search

the ontohub universe



Federation-Components

- Prover/Consistency-Checker API
- Brokering

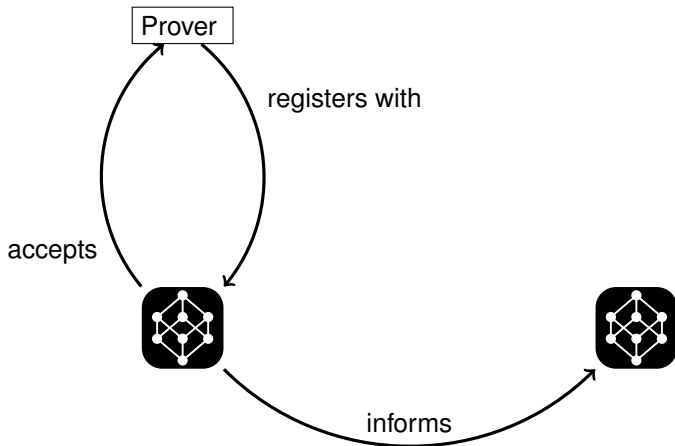
Prover/Checker API

- unified API for provers and consistency-checkers
- different modules which can be provided
- instances register with ontohub instances
- probably utilize SZS-ontology (Sutcliffe) for proof-status output

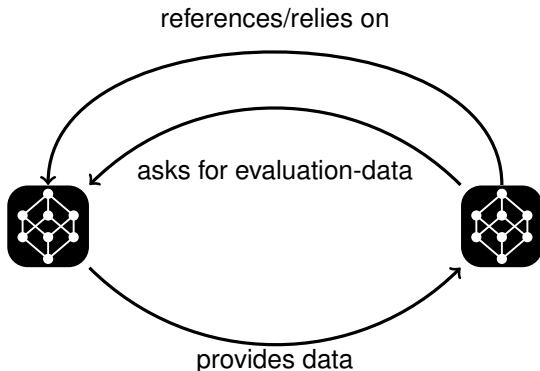
Broker

- Every ontohub instance is a Federation Broker
- instances register with Federation
- prover/checker register with instance, which registers it with Federation
- instances **rely** on each other

Reliance



Reliance - 2



- Ontohub instance evaluates ontology with reference to ontology on other instance.

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- Francis Gallegue and Gary Court. Json schema: core definitions and terminology. URL `http://json-schema.org/latest/json-schema-core.html`.
- Marc Hadley. Web application description language (w3c submission). URL `http://www.w3.org/Submission/2009/SUBM-wadl-20090831/`.

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Geoff Sutcliffe. The szs ontology. URL http://www.cs.miami.edu/~tptp/TPTP/TPTTParty/2007/PositionStatements/GeoffSutcliffe_SZS.html.

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References III

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