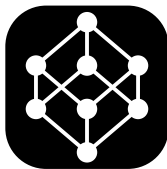


# Ontohub API

## 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?

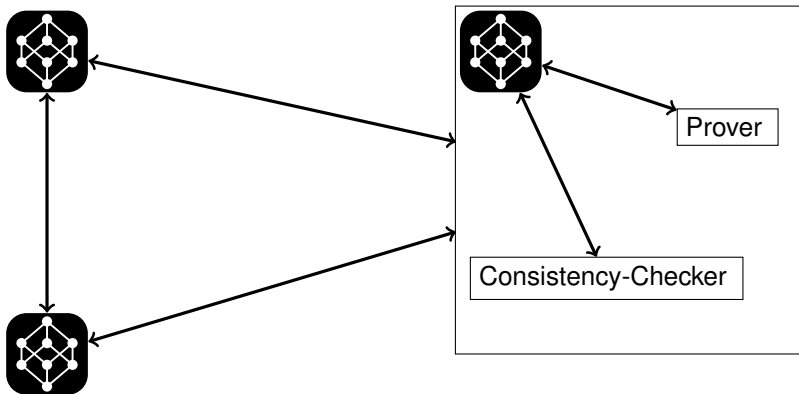
are *Resources* too

- 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

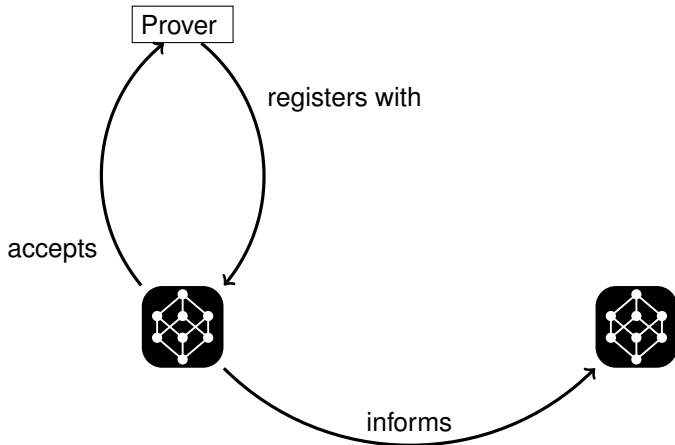
## Prover/Checker API

- 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

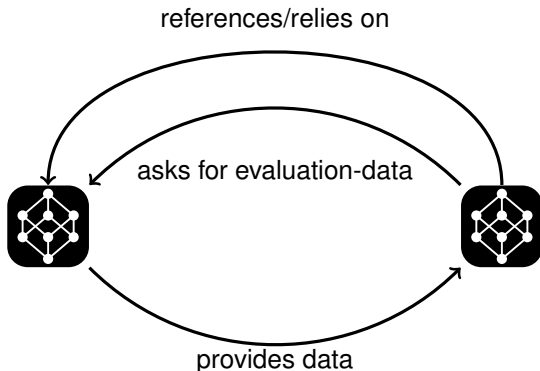
# Broker

- 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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Geoff Sutcliffe. The szs ontology. URL [http://www.cs.miami.edu/~tptp/TPTP/TPTTParty/2007/PositionStatements/GeoffSutcliffe\\_SZS.html](http://www.cs.miami.edu/~tptp/TPTP/TPTTParty/2007/PositionStatements/GeoffSutcliffe_SZS.html).

Geoff Sutcliffe. The szs ontologies for automated reasoning software. unknown.

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W3C. Ampersands in uri attribute values. URL `http://www.w3.org/TR/1999/REC-html401-19991224/appendix/notes.html#h-B.2.2.`