



Towards a Semantic 3D-Internet

- **semSL** is an approach to bring **semantic technologies**, such as RDF and SPARQL, into the 3D-Internet world Second Life.
- **semSL** aims to enhance the limited capabilities to **describe** and **search** for Second Life entities, such as objects and locations.
- **semSL** allows for describing Second Life entities by traditional **tags** and **key/value pairs**, and to build **typed links** to other entities and arbitrary resources in the Semantic Web.

Info: Second Life®

Second Life (SL) is a 3D virtual world that is entirely built by its users. Within SL, a user is represented by a person-like "avatar". Land is generally covered by objects created or bought by the land region's owners. Many organizations and companies now have a representation in SL.
Homepage: <http://secondlife.com>

Tagging with Triple-Tags

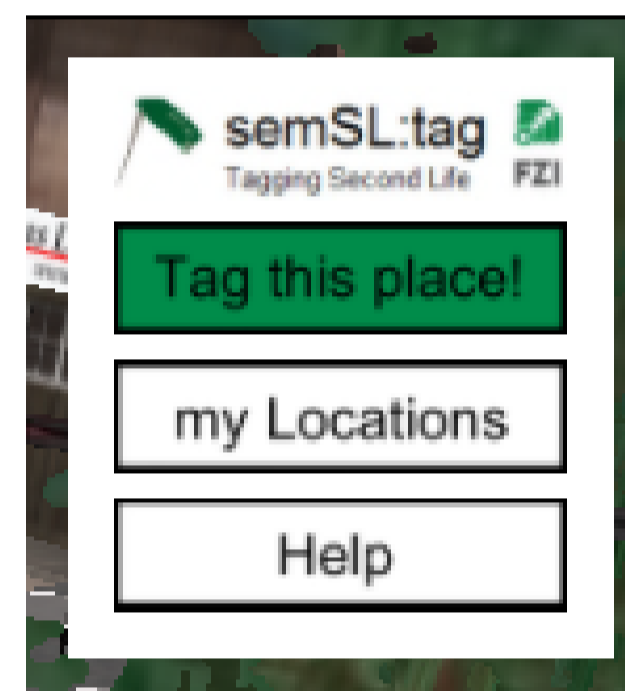
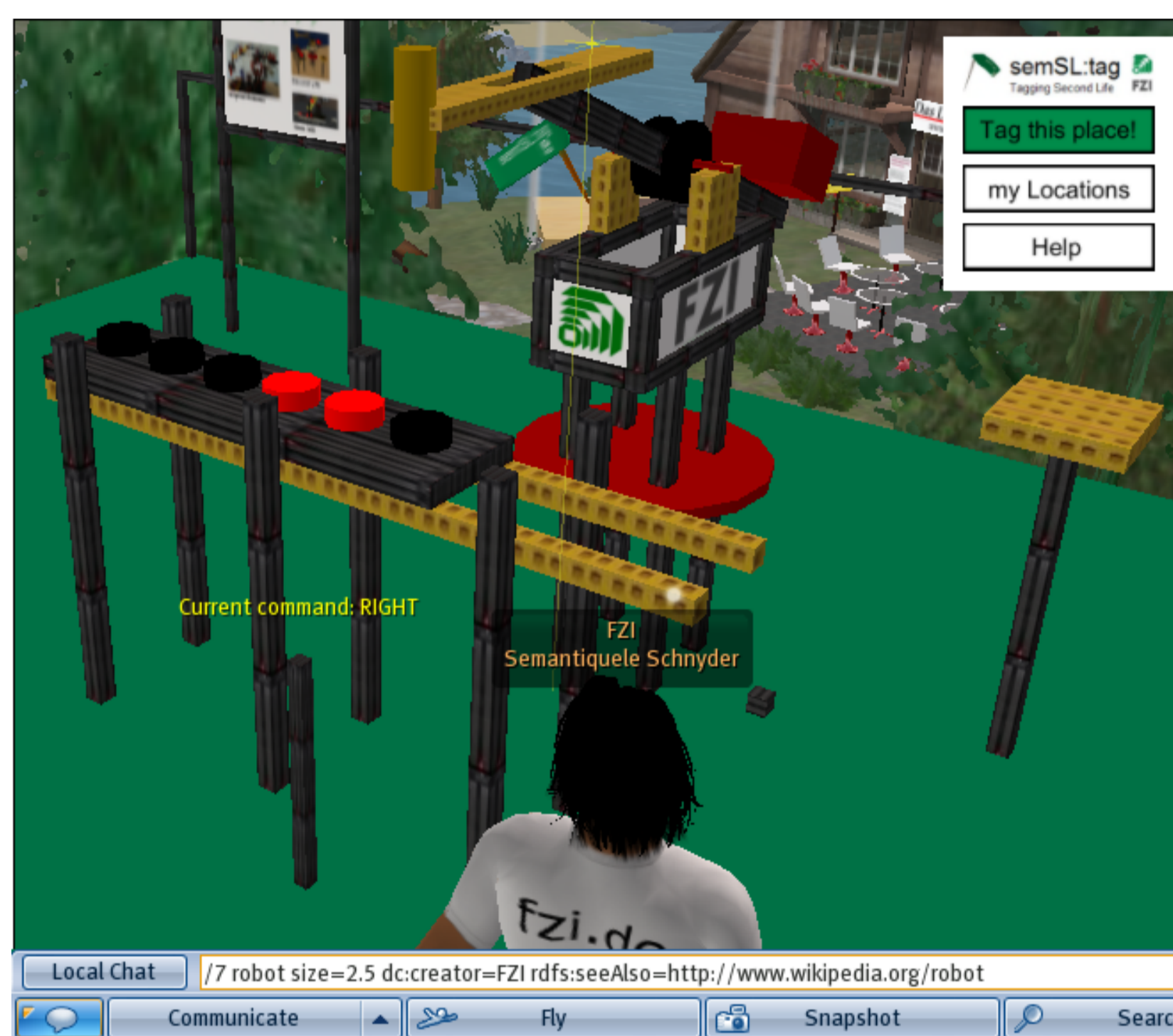
Tags in **semSL** are **Triple-Tags**, an extension of traditional tags. For example, the Triple-Tag

`rdfs:seeAlso=http://www.fzi.de/`

consists of a **plaintag** `seeAlso`, an (optional) **namespace** `rdfs`, and an (optional) **value** that may either be a **data literal** or a **URI**.

Using a URI as the value of a Triple-Tag builds a **typed link** between the tagged entity and the resource denoted by that URI.

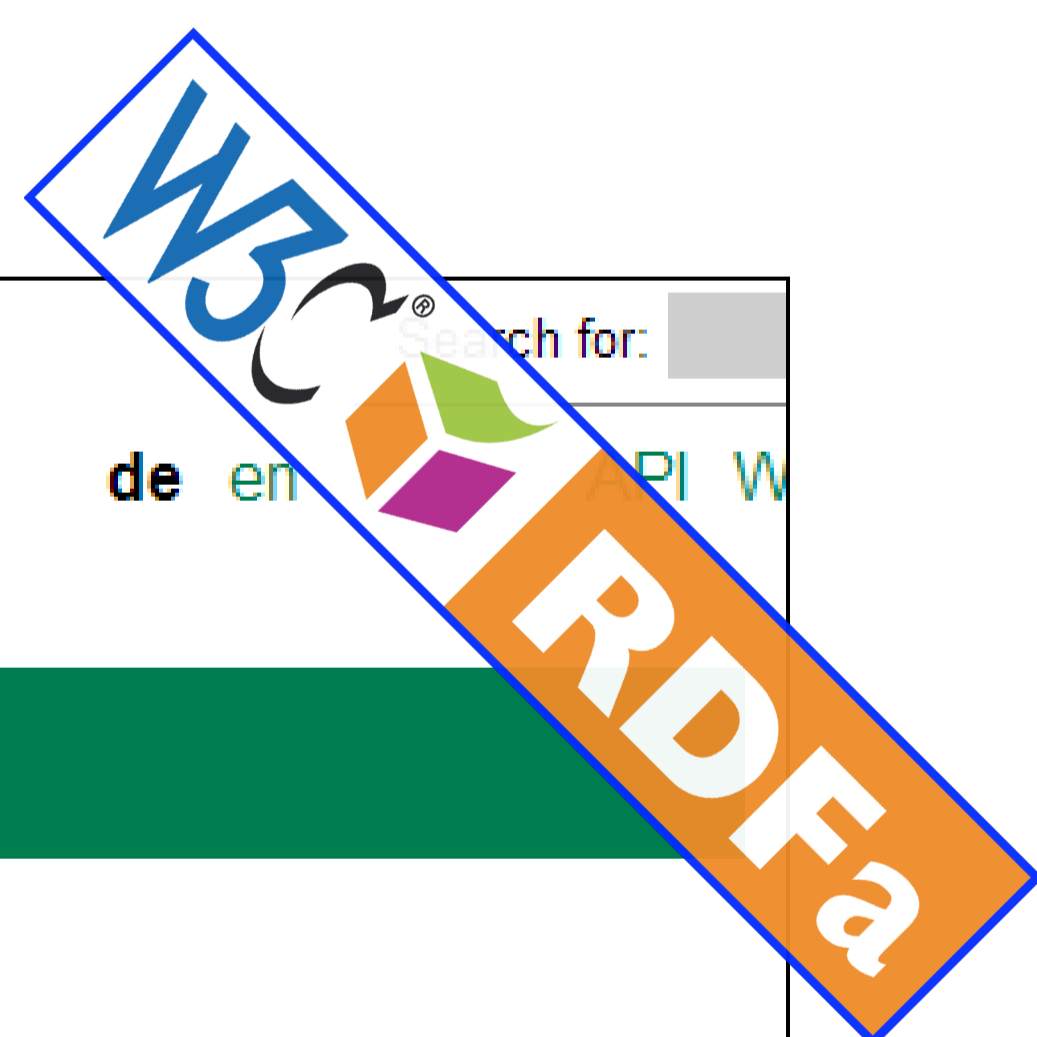
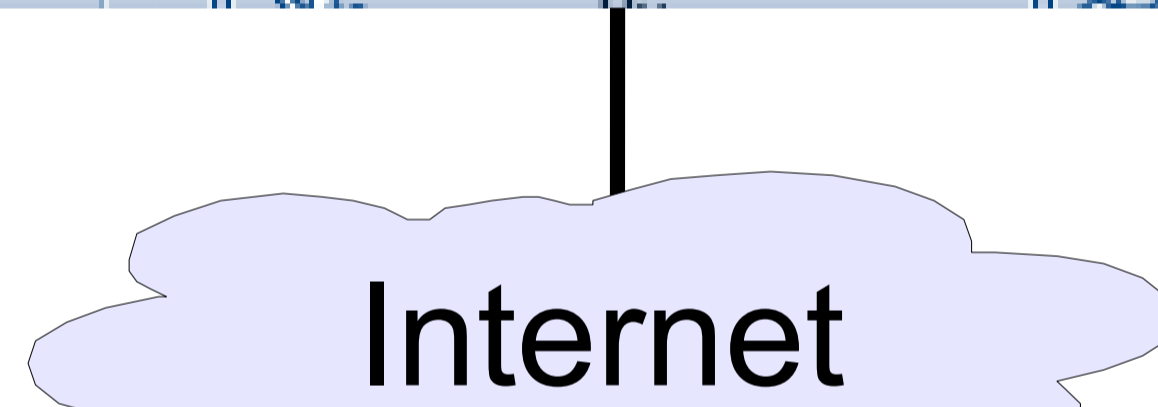
semSL assigns a URI to each tagged entity. This enables data linking within Second Life, and between entities in Second Life and arbitrary resources in the Semantic Web.



Objects having a **Tagget** (the green flag) assigned to them by their owner can be tagged by any user. The Tagget receives the tags on behalf of the object.

The **semSL-HUD** ("Head Up Display") allows for tagging the user's current location in Second Life. The tagged location is defined by a 10m sphere around the avatar.

Tagging is performed via Second Life's chat line.



Entity \$4p13-00-00 (object)

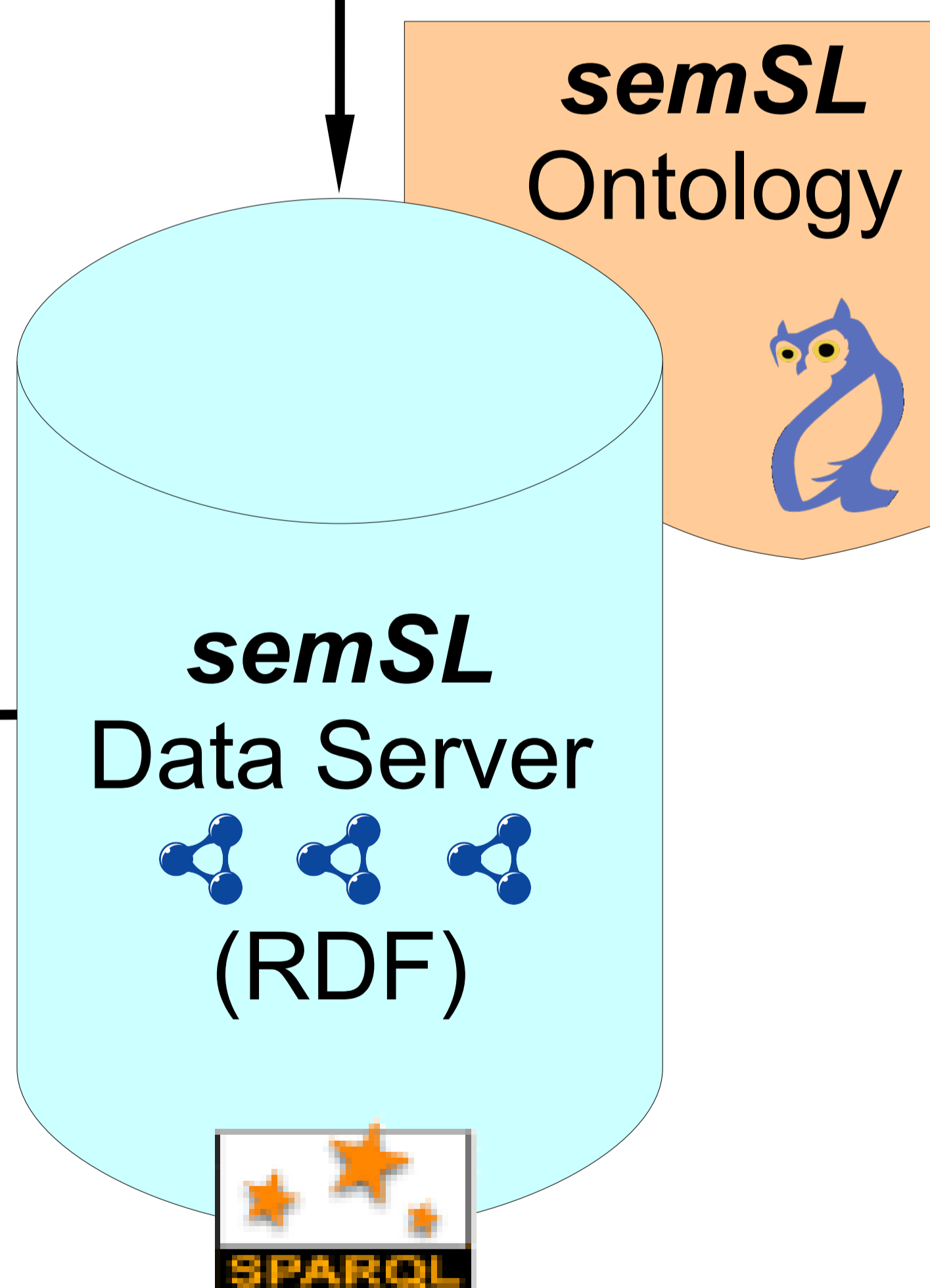
URI: [http://semsl.org/\\$4p13-00-00](http://semsl.org/$4p13-00-00)
Owner: Semantiquele Schnyder
Location: Baden-Wuerttemberg <123, 16, 33> [MAP] [TELEPORT]
Created: 2007-08-06 13:46:39
Last updated: 2008-09-27 22:44:34
Number of tagging avatars: 3

Tag-Cloud

2007 cool dc:creator dc:date demo disks ex:fun fzi green foaf:homepage moving robot rotate rotating scripting rdfs:seeA 2 Values for rdfs:seeAlso

value	quantity
http://www.wikipedia.org/robot	1
http://www.fzi.de/	1

Images that appear in this section were found on flickr.com using the



Data Server & Homepage

The **semSL Data Server** receives the tags coming from Second Life and stores them into an **RDF triple store**.

The data schema is defined by an **OWL ontology**, the **semSL Ontology**.

All the stored RDF data can be queried via a **SPARQL** endpoint.

Each tagged entity is assigned a **homepage** presenting that entity's tagging data, both in human readable form and embedded as **RDFa**.

Additional Features, Work in Progress and Future Plans

- **Embedded pictures** of entities that are uploaded by users to Flickr®
- **Geographical Map View** showing the location of the current entity and its related entities
- **Relation Graph View** showing the current entity as a node, its tags and attributes, and its related entities
- **Advanced Search Options** at the Homepage
- **semSL-Pedia:** A Wiki page for each tagged entity, allowing users to describe the entity