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.

Tagging with Triple-Tags

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

\[
\text{rdfs:seeAlso=http://www.fzi.de/}
\]

consists of a plaintext tag `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.

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

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