

The LifeWatch-ITA Core Ontology and its application to the Phytoplankton domain

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* Why an Ontology?

- * Biodiversity and ecosystems data are very heterogeneous and need to be better managed for improving the actual scientific knowledge.
- * Semantic approaches provide a promising way to capture rich representations of data in ways that afford maximum interoperability and detailed description for re-use.
- * A Semantic Approach can be used to facilitate the discovery and integration of ecological data

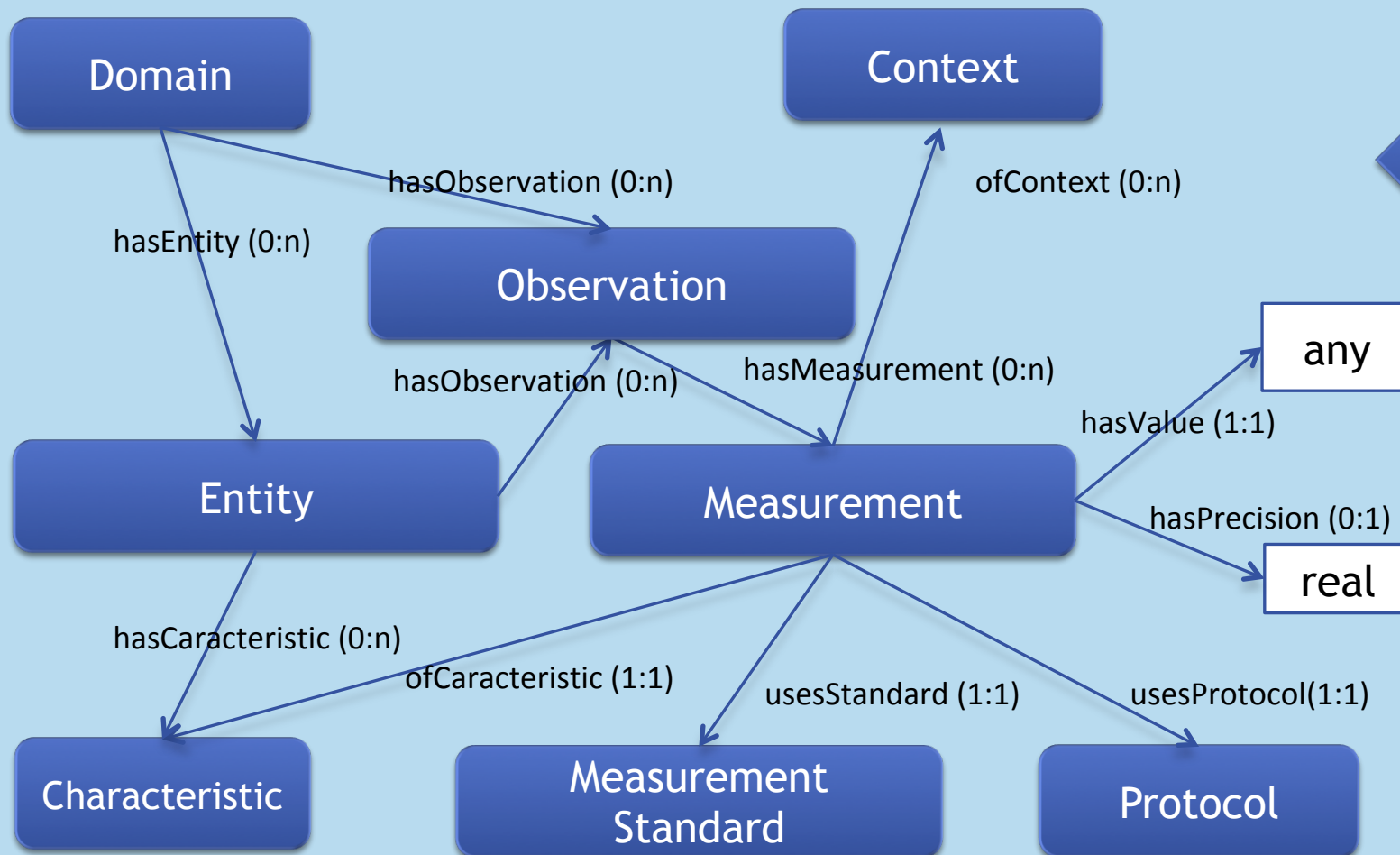


* Background

- * Different Semantic Approaches has been proposed in the last years:
 - * OBOE (MADIN et al., 2006)
 - * SERONTO (WERF et al., 2009)
 - * ENVO, The Environment Ontology (Buttigieg et al., 2013)
 - * OGC O&M Model (Cox, 2013)
 - * ...



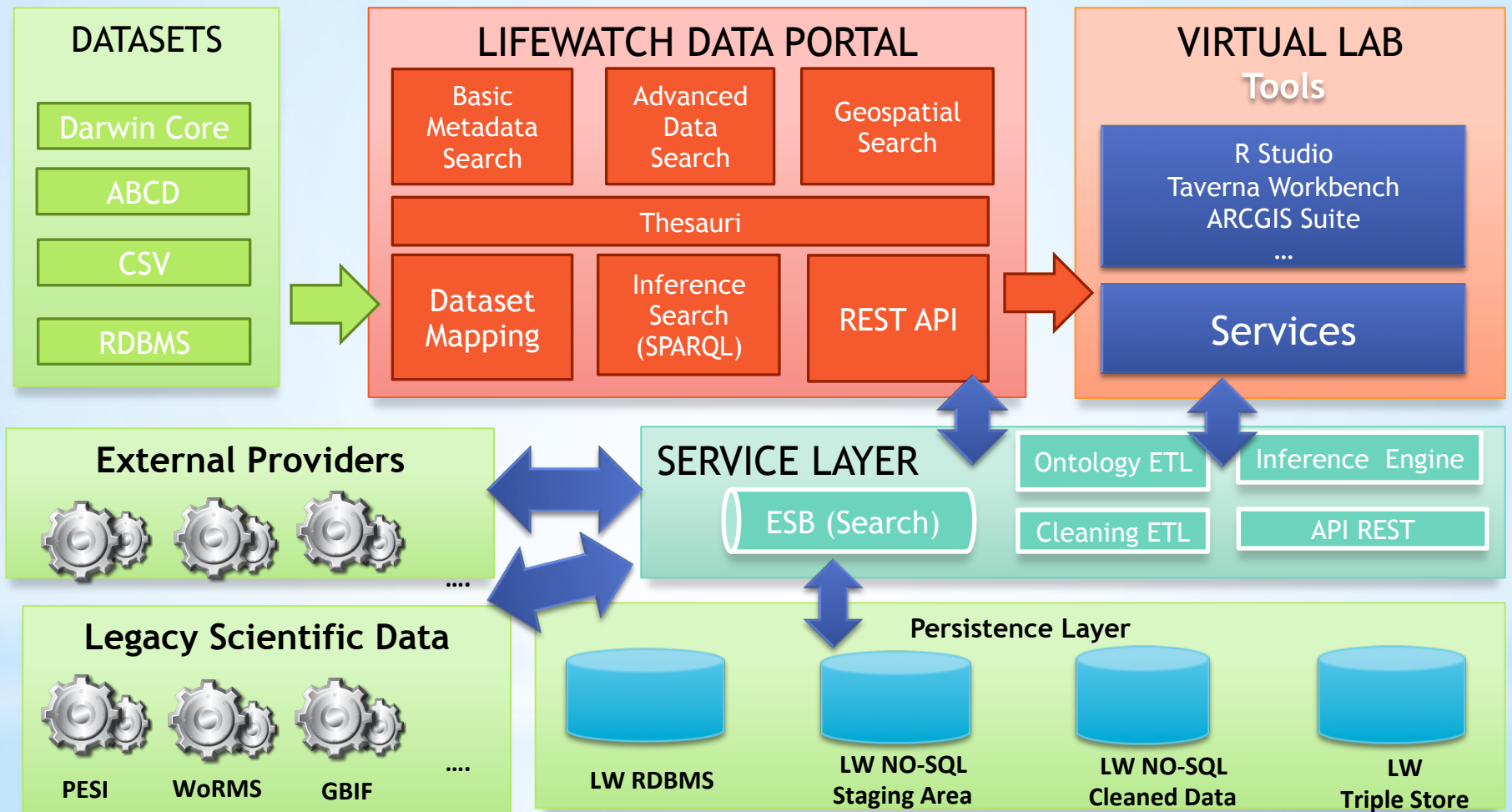
* The LifeWatch-ITA Ontology framework



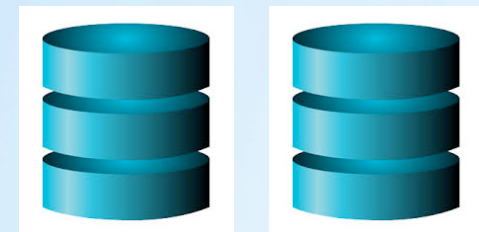
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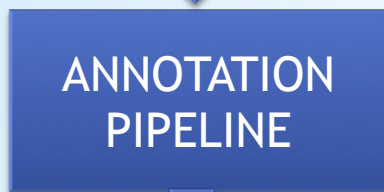
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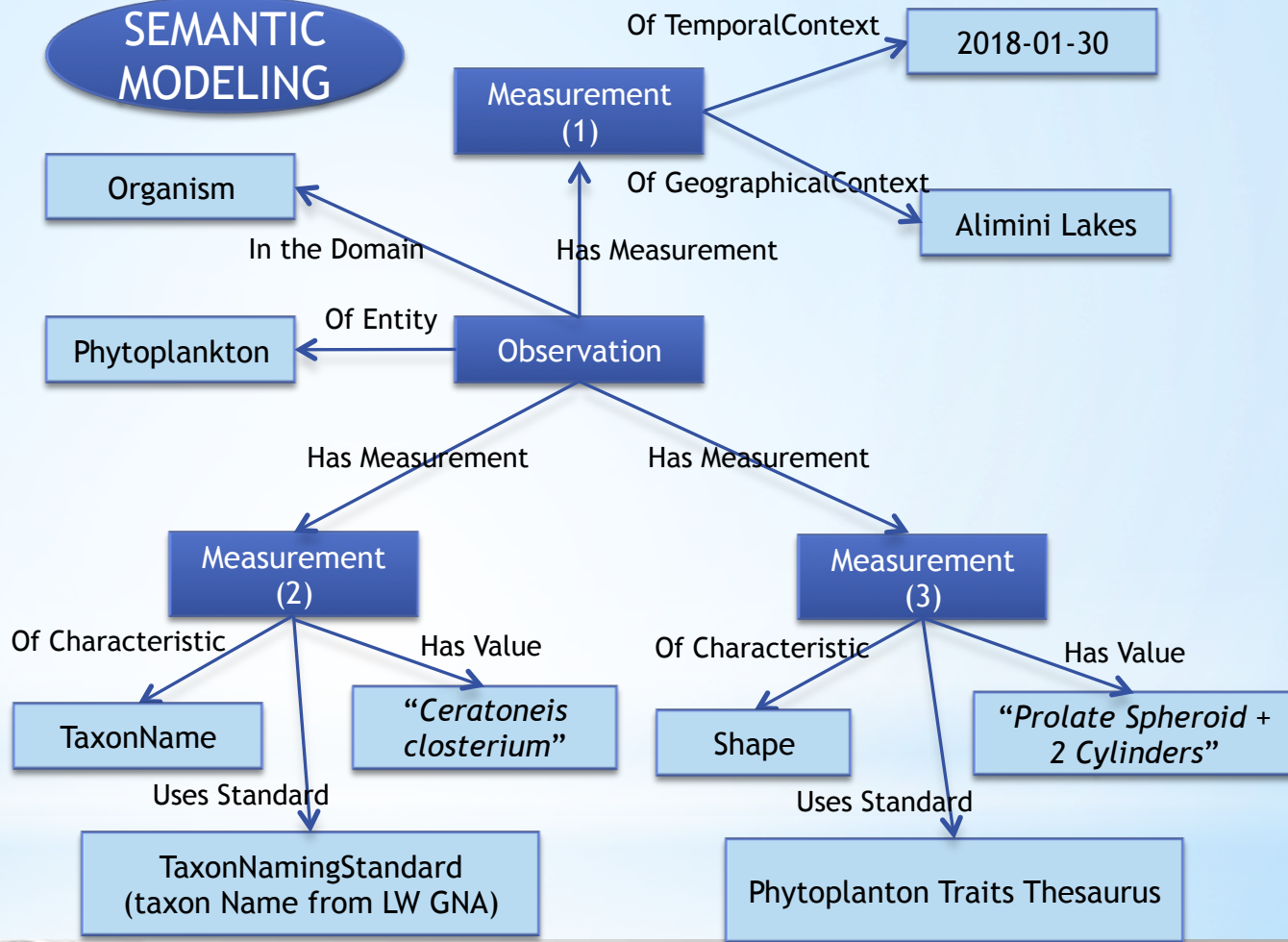
*The Phytoplankton Domain



LW NO-SQL LW R-DBMS




LW Triple Store




* Semantic Searches

SEMANTIC SEARCH



SPARQL QUERY

SEMANTIC SEARCH



SPARQL QUERY FOR EXPERT

EXAMPLE

```
PREFIX lw_ontotrait:<http://www.lifewatchitaly.eu/ontologies/>
PREFIX oboe:<http://ecoinformatics.org/oboe/oboe.1.0/oboe-core.owl#>
PREFIX dwc:<http://rs.tdwg.org/dwc/terms/>
prefix xsd: <http://www.w3.org/2001/XMLSchema#>
SELECT ?biovolume ?scientificName ?phylum ?locality FROM <http://TestSviluppo>{
{
select * where {
?m rdfs:type oboe:Measurement.
?m oboe:ofCharacteristic ?char.
?char rdfs:type <http://thesauri.lifewatchitaly.eu/PhytoTraits/index.php?tema=21&/biovolume>.
}
```

CSV RUN

RESET

Powered By Liferay

- ✓ ---Select a query---
- Retrieve all records of biovolume with values <100 μm^3 and provide also the corresponding scientific name, phylum, locality
- Retrieve all records of biovolume with values $\geq 100 \mu\text{m}^3$ e <1000 μm^3 and provide also the corresponding scientific name, phylum, locality
- Retrieve all records of biovolume with values $\geq 1000 \mu\text{m}^3$ e <10000 μm^3 and provide also the corresponding scientific name, phylum, locality;
- Retrieve all records of biovolume with values $\geq 10000 \mu\text{m}^3$ and provide also the corresponding scientific name, phylum, locality

FORMAT RUN

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