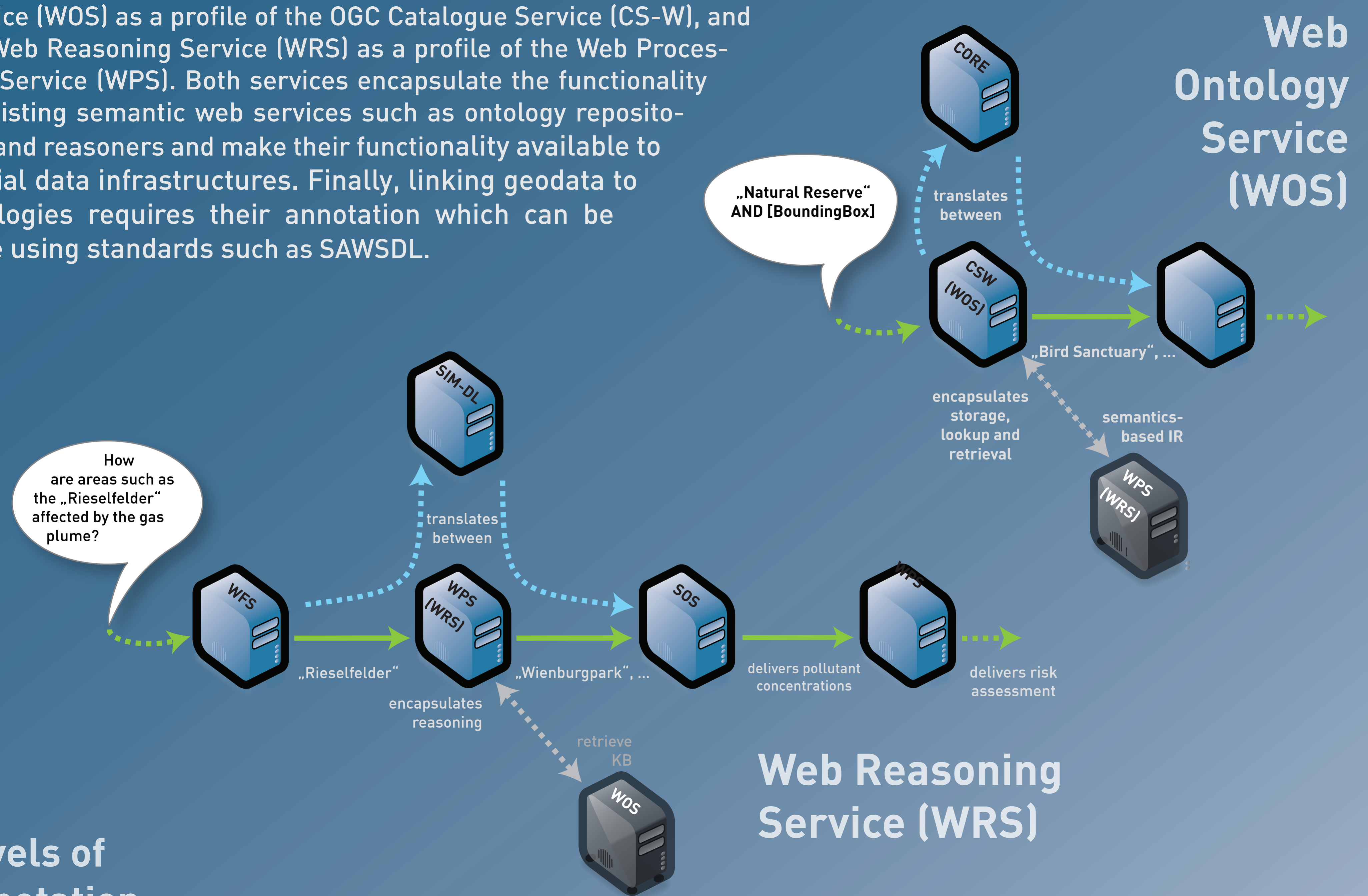


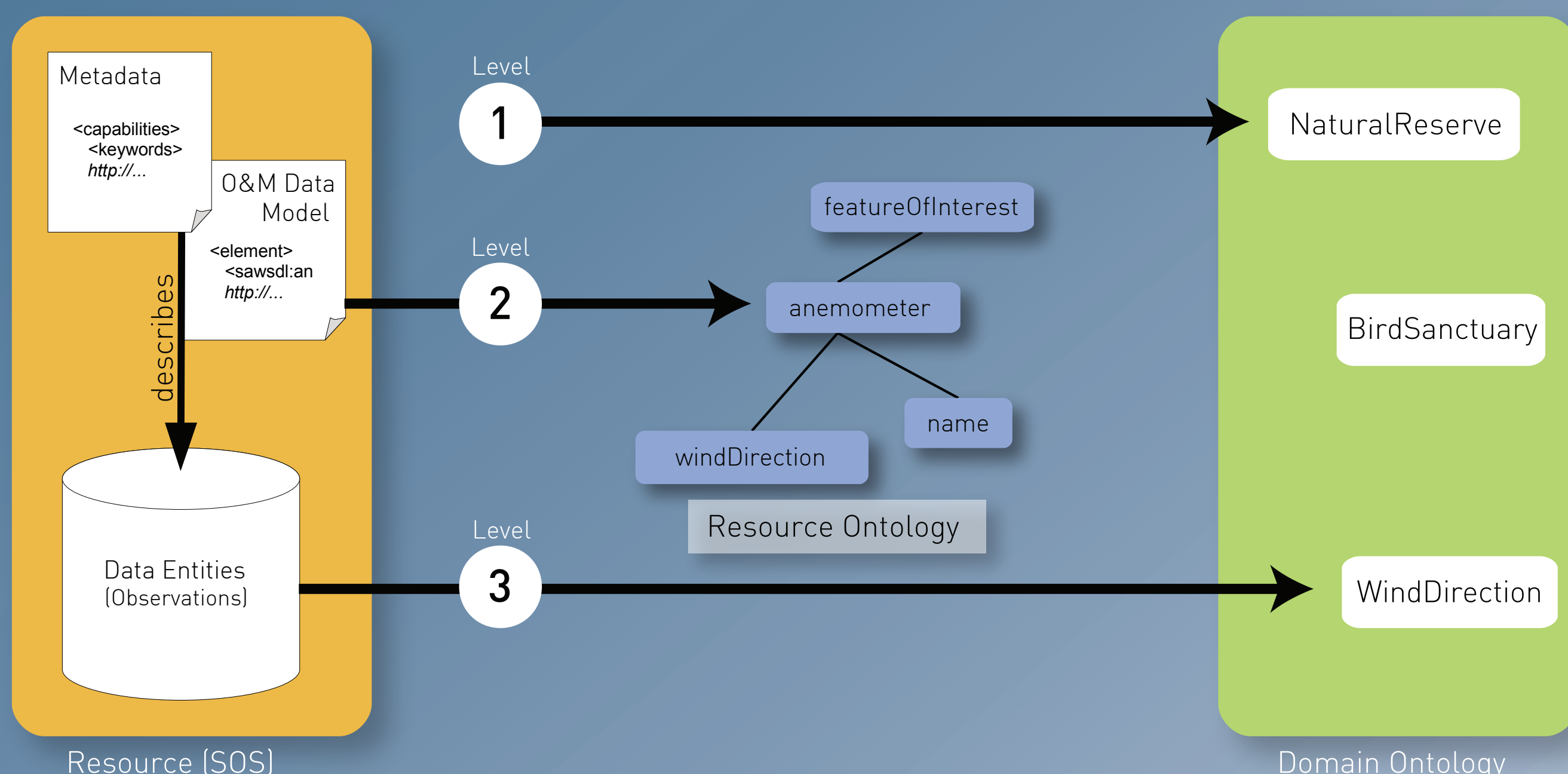
# Towards

# Semantic Enablement for Spatial Data Infrastructures

Based on abstract reference models, the Open Geospatial Consortium (OGC) has established standards for the storage, retrieval, and processing of geographical information. These standards act as foundation for the implementation of concrete services and Spatial Data Infrastructures (SDI). Research on geo-semantics plays an increasing role to support complex queries and discovery across heterogeneous information sources, as well as for on-the-fly integration and semantic translation. So far, existing approaches only target individual solutions or focus on the Semantic Web, leaving the integration with SDI aside. What is missing is a common semantic enablement layer for Spatial Data Infrastructures which also integrates reasoning services from the Semantic Web. Instead of developing new semantically enabled services from scratch, we propose to create profiles of existing services that implement a transparent mapping between the OGC and the Semantic Web world. We introduce the Web Ontology Service (WOS) as a profile of the OGC Catalogue Service (CS-W), and the Web Reasoning Service (WRS) as a profile of the Web Processing Service (WPS). Both services encapsulate the functionality of existing semantic web services such as ontology repositories and reasoners and make their functionality available to spatial data infrastructures. Finally, linking geodata to ontologies requires their annotation which can be done using standards such as SAWSDL.



## Levels of Annotation



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