




## MyGeoOntology – An Information-Focused Geospatial Ontology for SDI towards Knowledge Interoperability

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## Introduction


- Knowledge Ambiguity in geospatial data – Geographic considerations such as spatial features, locations, place names, interrelationships, and attributes are often ambiguous and imprecise.




**FIG** **Semantic Technology ..** 

- Create a network of machine-processable resources.
- Existing in parallel with the current World Wide Web.
- Enables software to carry out tasks on users' behalf.
- Moving from a Web of "finding things" to a Web of "doing things".



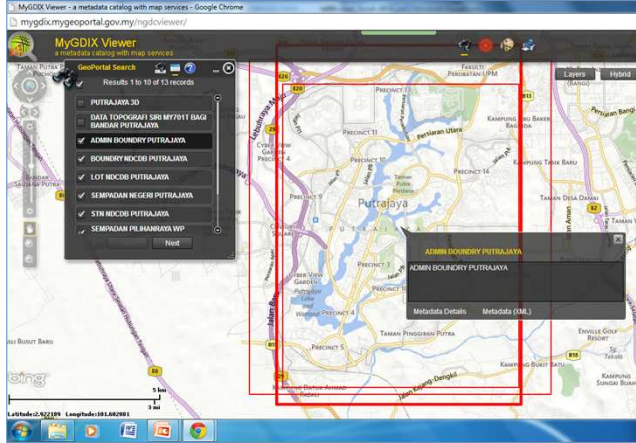
**FIG** **.. and Ontology** 

- Semantic technology provides contextual meaning in the exchange of geo-spatial information through the ability to organize information using ontologies (knowledgebase) and reasoning.



**FIG** **Spatial Data Infrastructure**

SDI such as MyGDI facilitates sharing of geospatial data through a **catalogue** of metadata and connected systems for data providers to register data and users to access the information.




The screenshot shows the MyGDI Viewer interface. On the left, a search results panel lists various data layers for Putrajaya, including 'PUTRAJAYA 3D', 'DATA TOPOGRAFI SIRI MY7011 (SAGI) BANGSI PUTRAJAYA', 'ADMIN BOUNDARY PUTRAJAYA', 'BOUNDARY KECAS PUTRAJAYA', 'LOT KECAS PUTRAJAYA', 'SEMPADAN NEGASI PUTRAJAYA', 'STN KECAS PUTRAJAYA', and 'SEMPADAN PIL BAHARAYA WPP'. A popup window is open over the map, displaying 'ADMIN BOUNDARY PUTRAJAYA' with options for 'Metadata Details' and 'Metadata (XML)'. The map shows various precincts and landmarks in Putrajaya.

Logos at the bottom include UTM (Universiti Teknologi Malaysia), NPEM, MaCGDI, Universiti Teknologi Mara, UPM (Universiti Putra Malaysia), and UoM (Universiti Sains Malaysia).

**FIG** **Enriching SDI**







- Within SDI environment, Semantic application can use the catalogue to mediate the different meanings in the data and enrich the data with other information to achieve knowledge interoperability.


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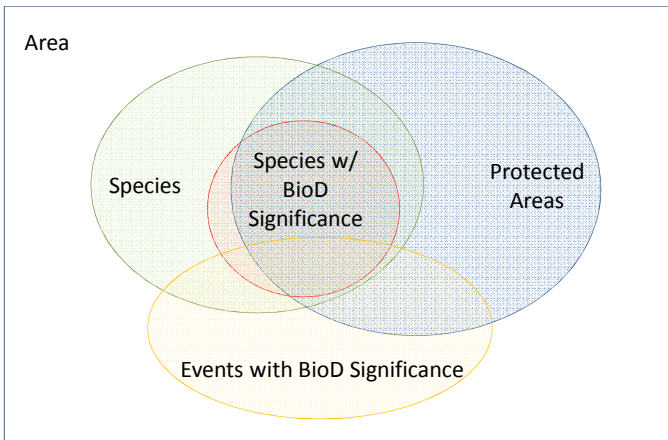
**FIG** **Geospatial Knowledge** 

Status of biodiversity for an area:

- Information about species in the area (or by areas).
- Status of the species in terms of:
  - Its biodiversity significance.
  - Are the species are in protected areas.
- Any events that take place where the species in question are located that are of a biodiversity significance.
- Are there species and events that are of biodiversity significance that are not in the protected areas.

**FIG** **Geospatial Knowledge (cont.)** 









Area

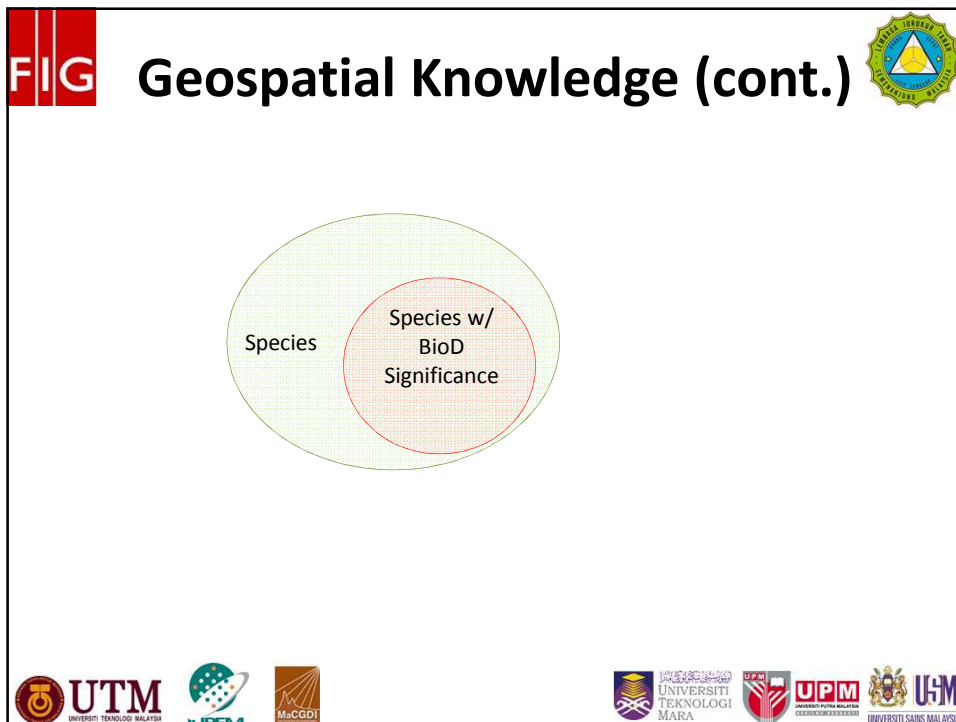
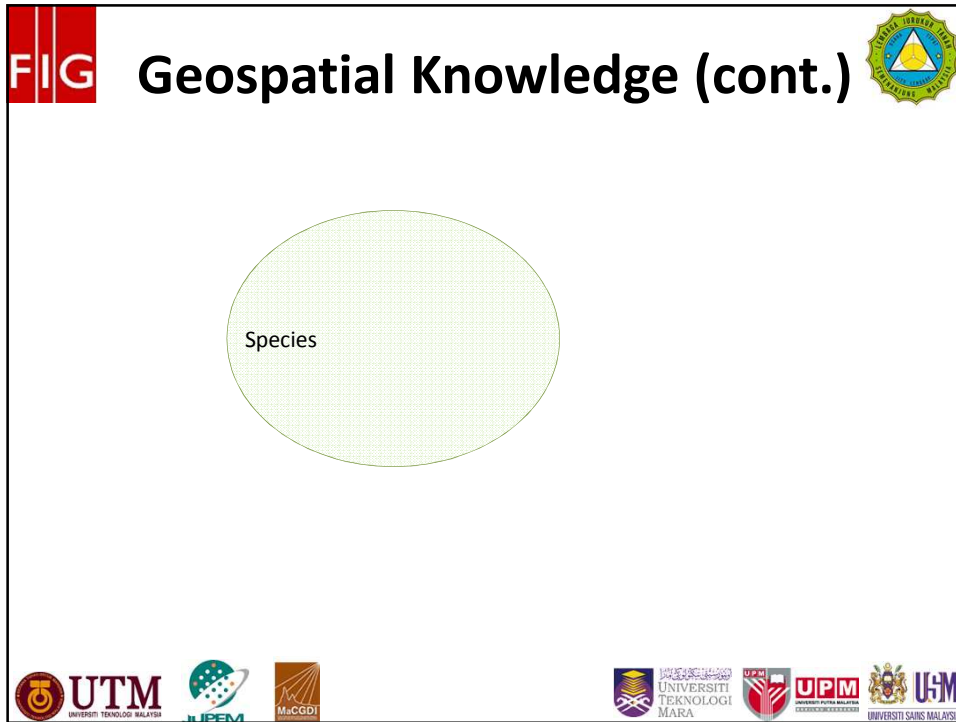
Species

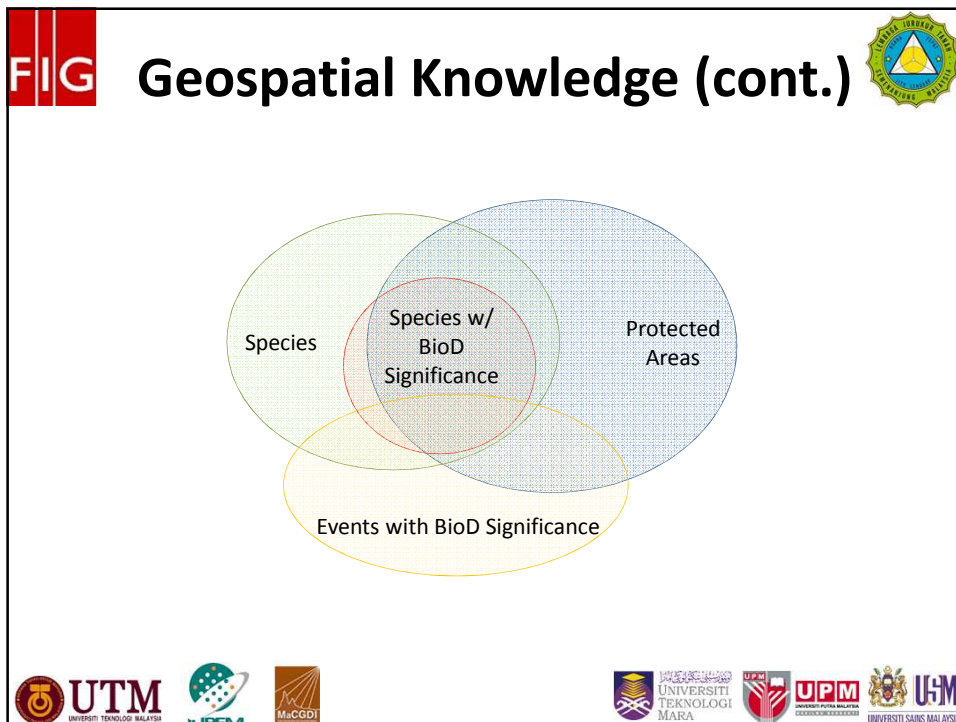
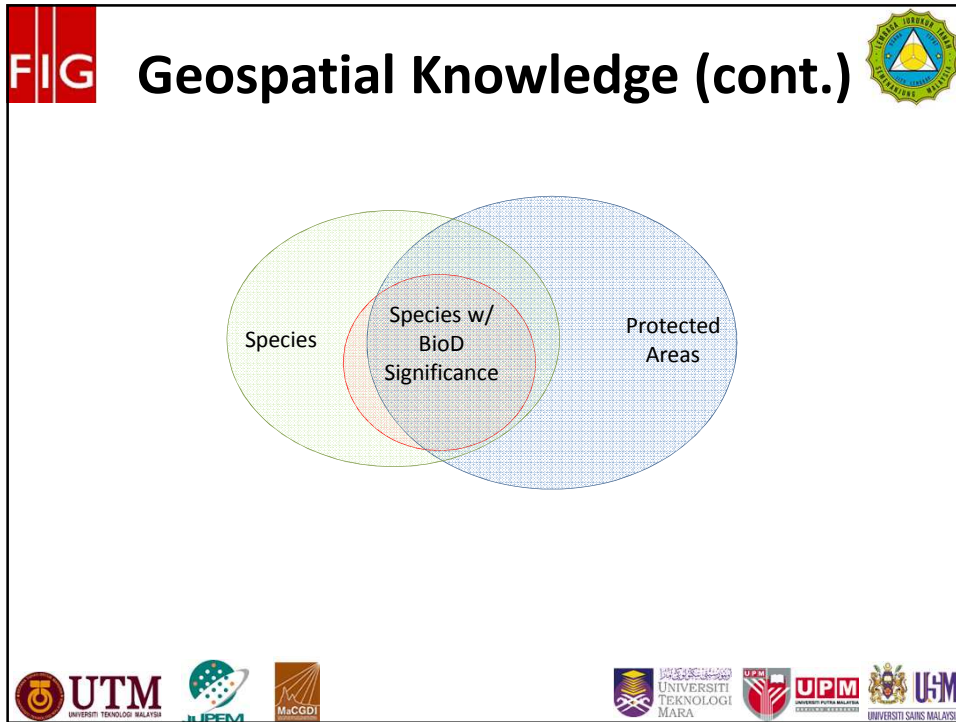
Protected Areas

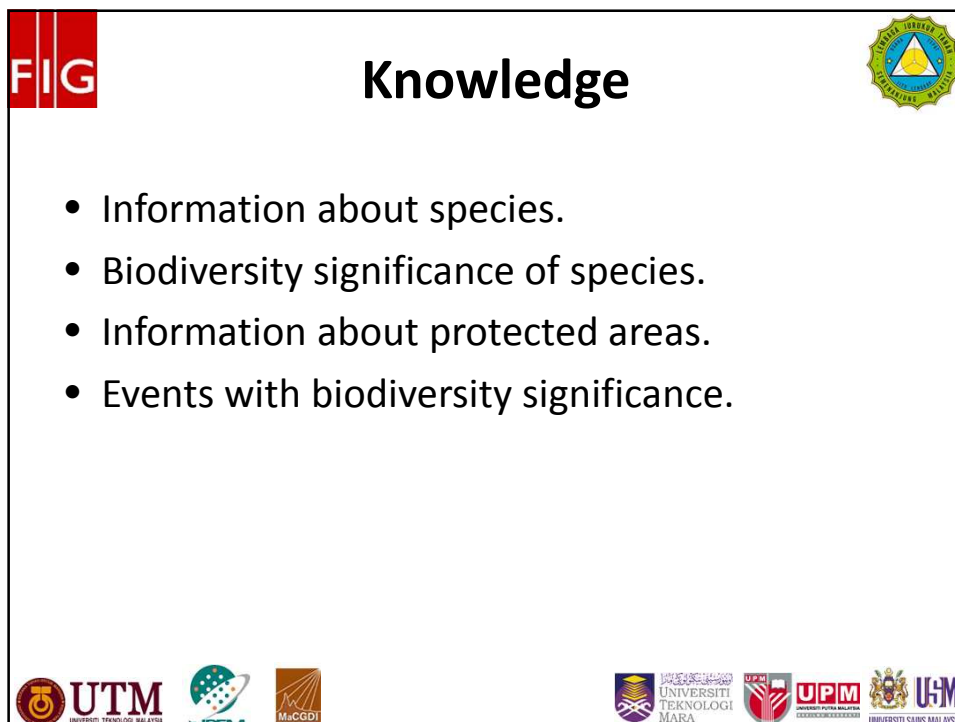
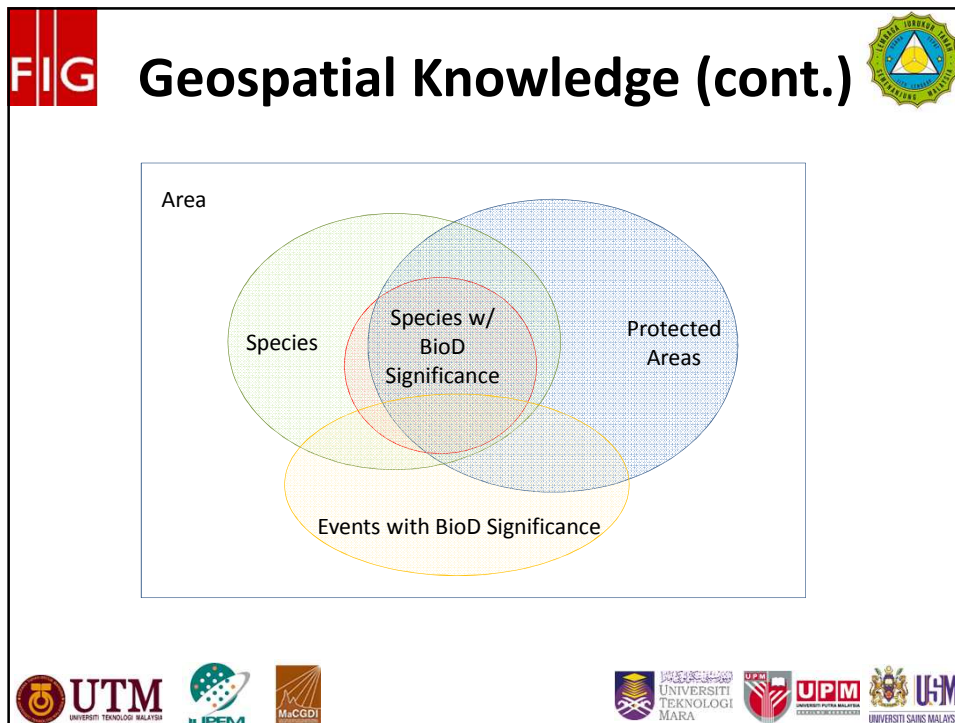
Species w/ BioD Significance

Events with BioD Significance













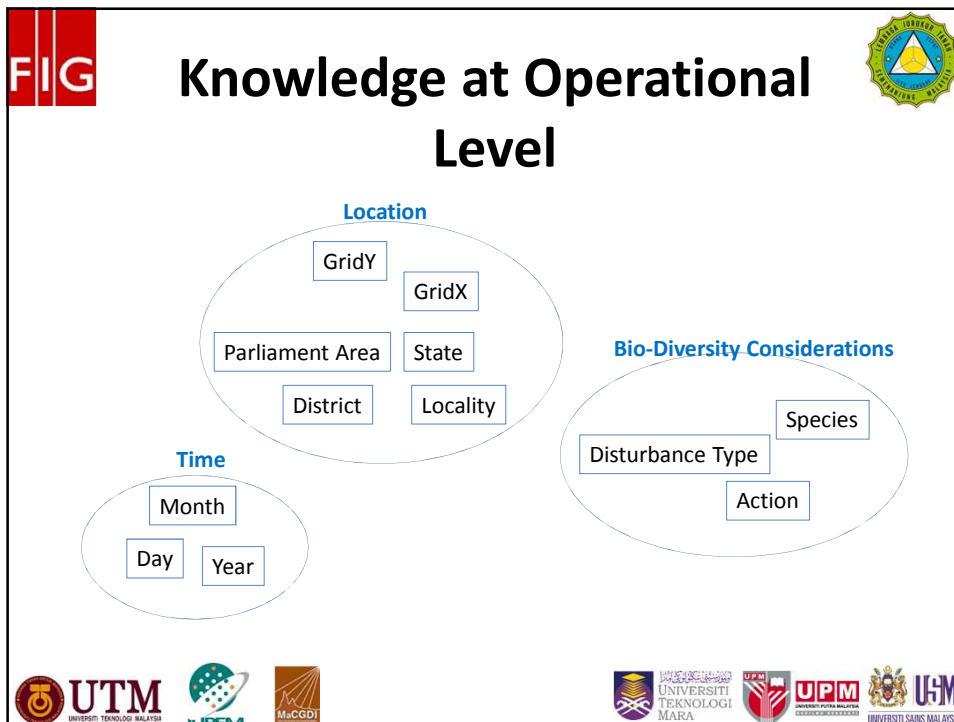
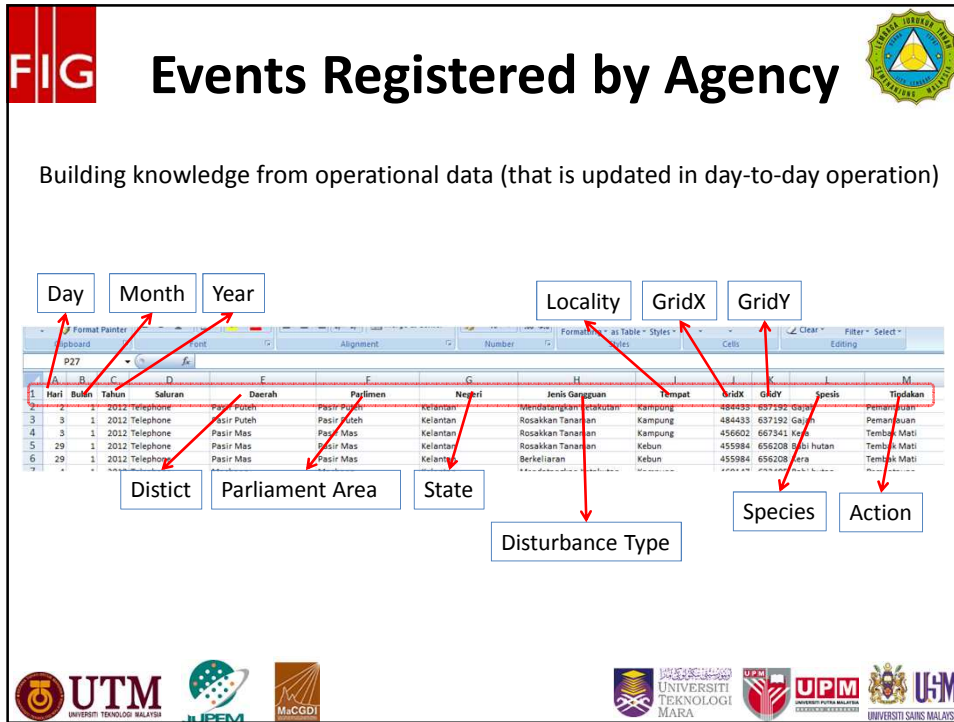
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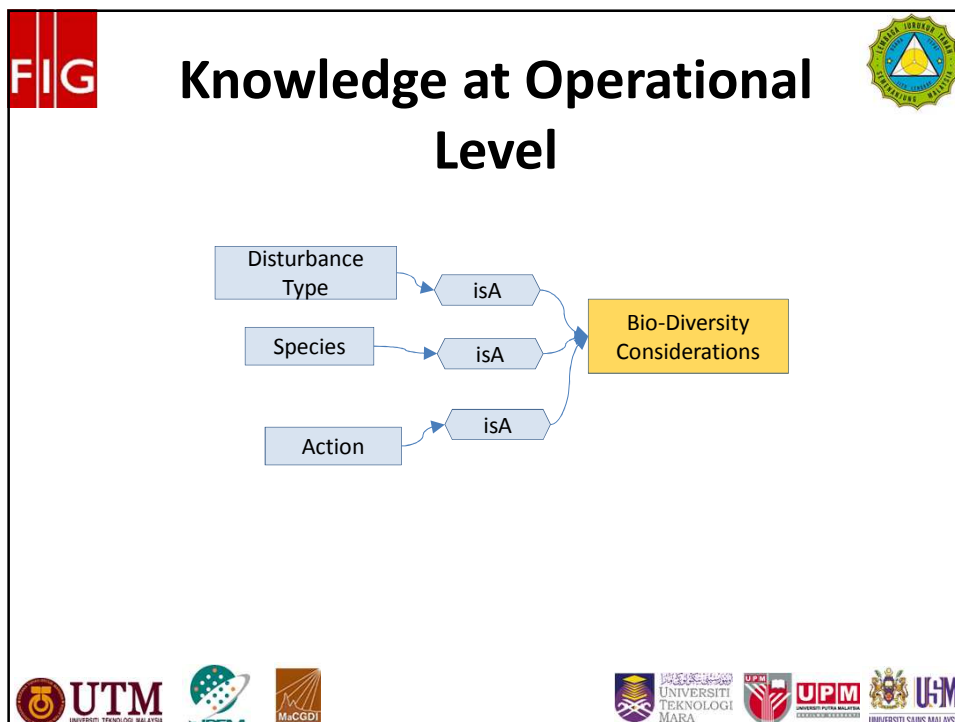
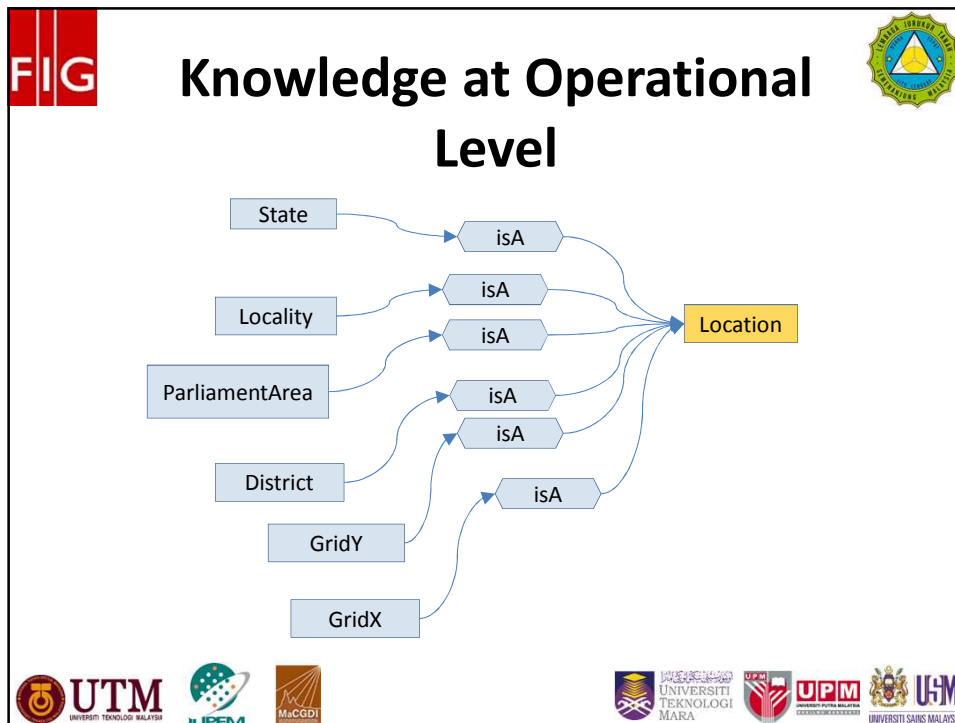
# Knowledge

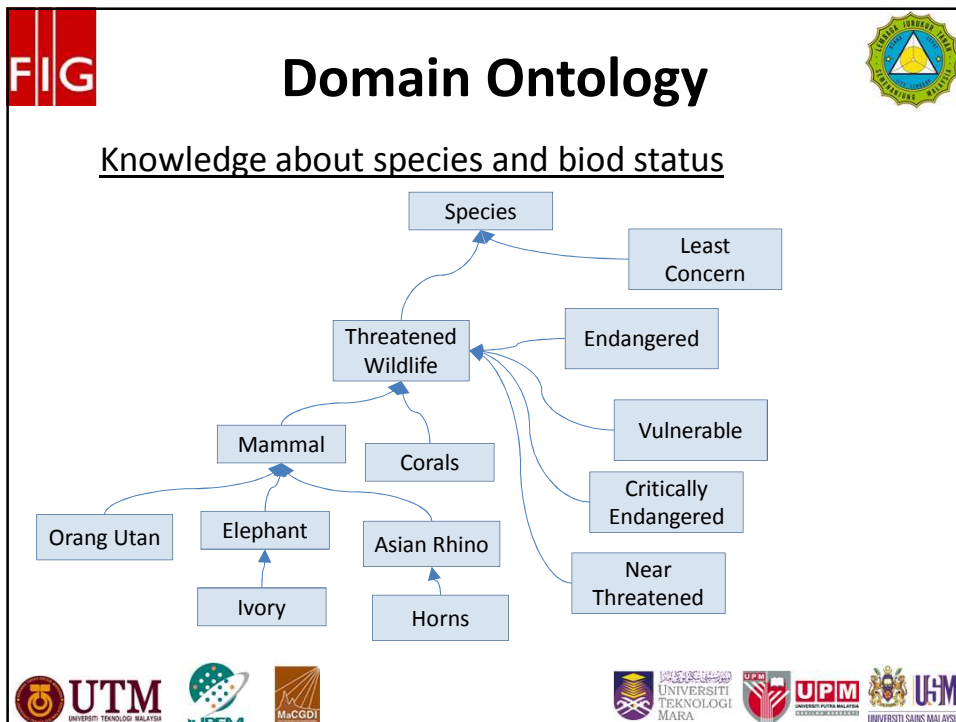
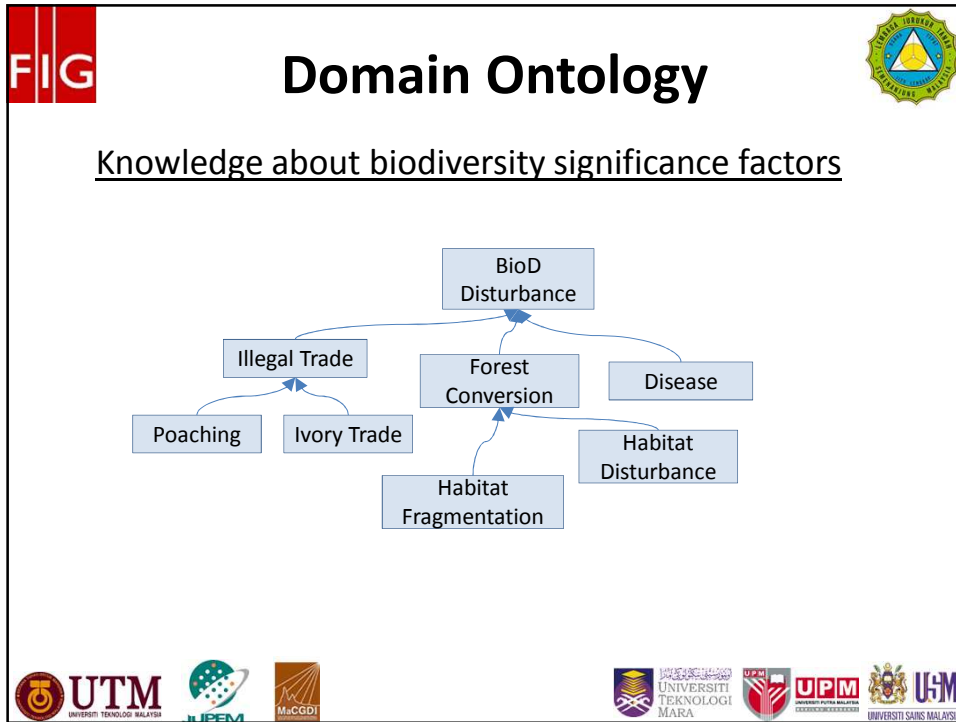
- Information about species. ←
- Biodiversity significance of species. ←
- Information about protected areas. ✓
- Events with biodiversity significance. ✓

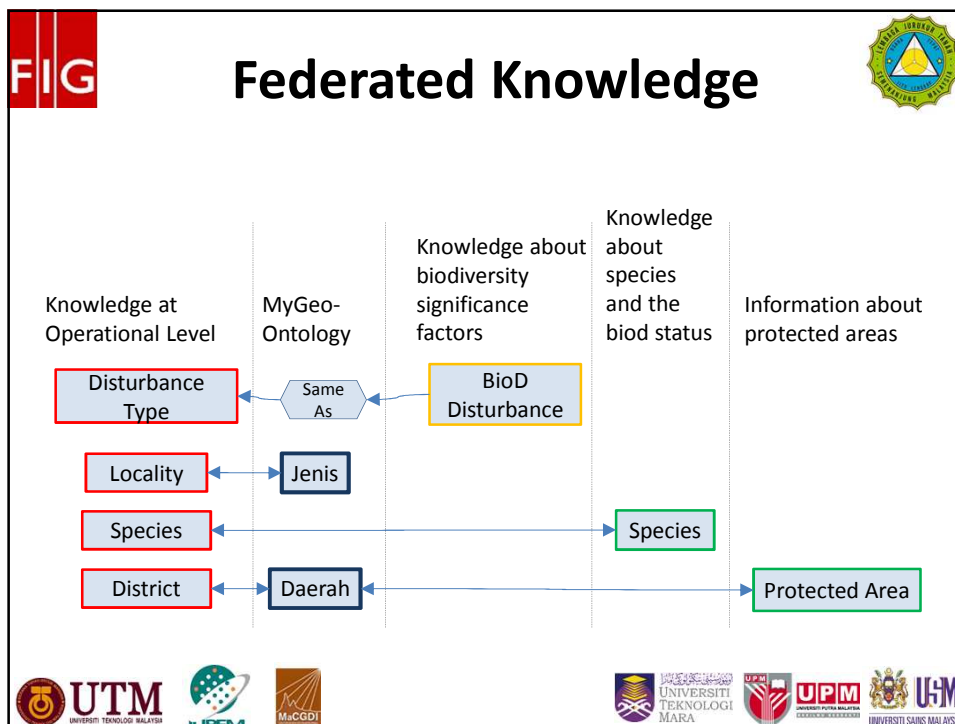
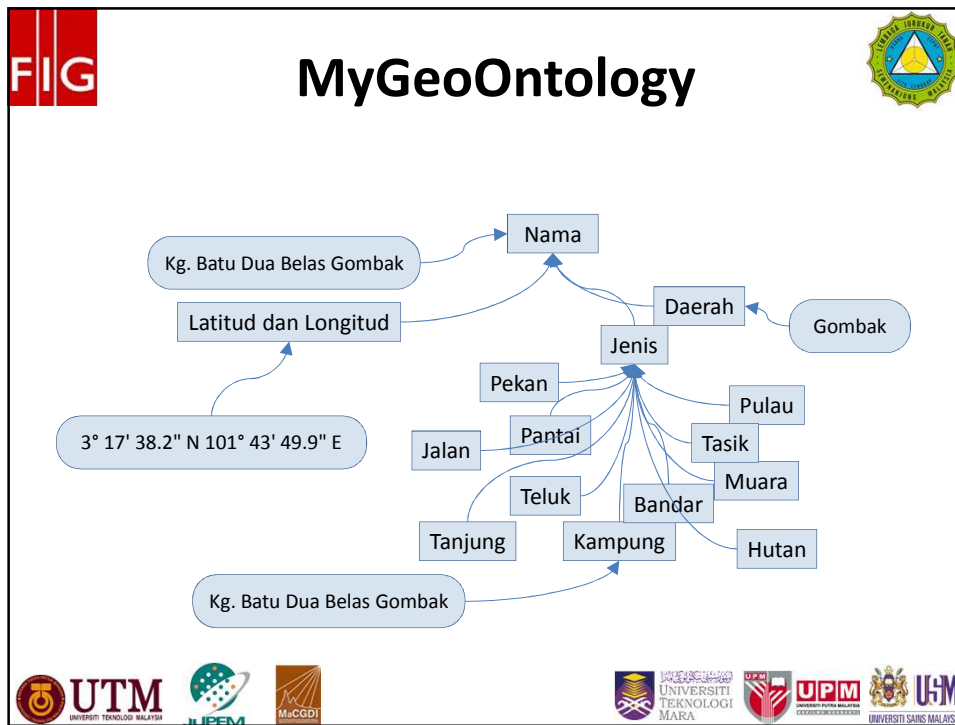
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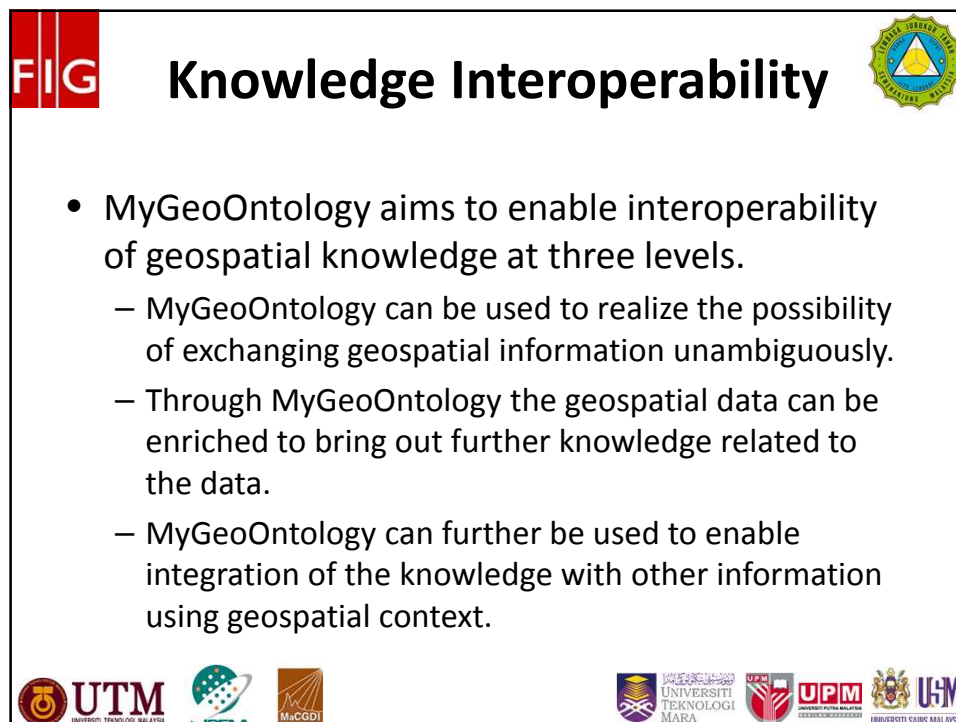
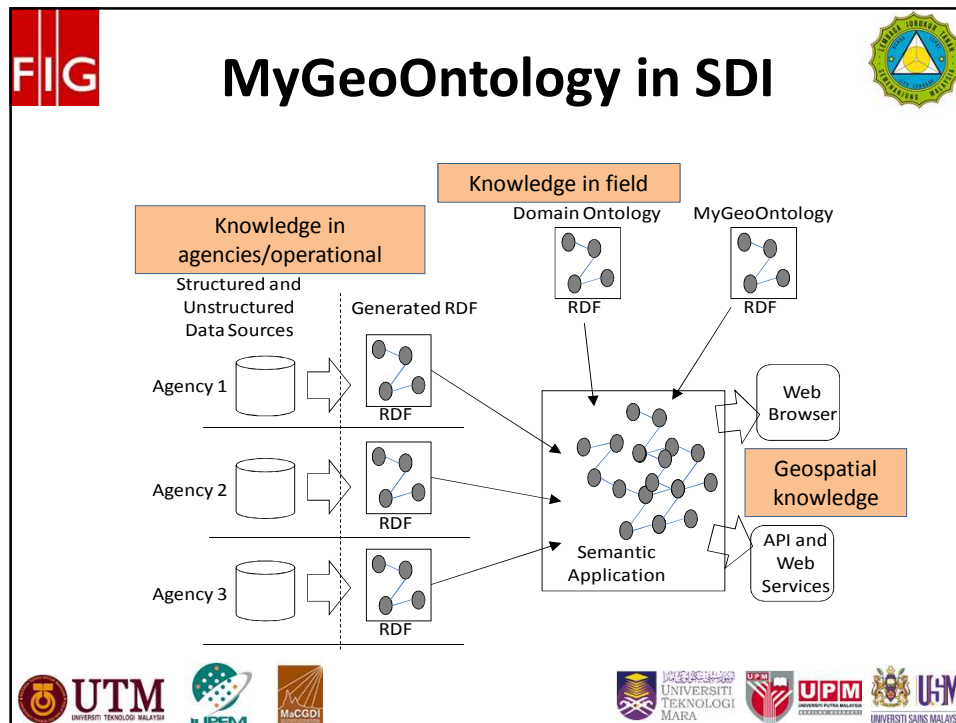
# Events Registered by Agency













**Thank you for your  
attention!**

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