

# **GCP Web Pantheon**

Generic Web Application and Map Viewers using  
the Middleware Mapping Module

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1. **What and why?** *Manuel*
2. **Overview of our implementation structure**  
*Alexis*
3. **Demonstration of the Web Pantheon Application** *Alexis*

# Mapping Domain

- Genetic Maps
- QTL
- Genome annotations - Sequences

# **Implementation of middleware and interface for Mapping domain model**

1. Implementation of the core of the mapping middleware module (Demeter- Ceres)
2. Database adaptors : Hibernate + Web Services (Osiris)
3. Generic Web Application (Belenus)
4. Connection to existing generic Map Viewers (Belenus)

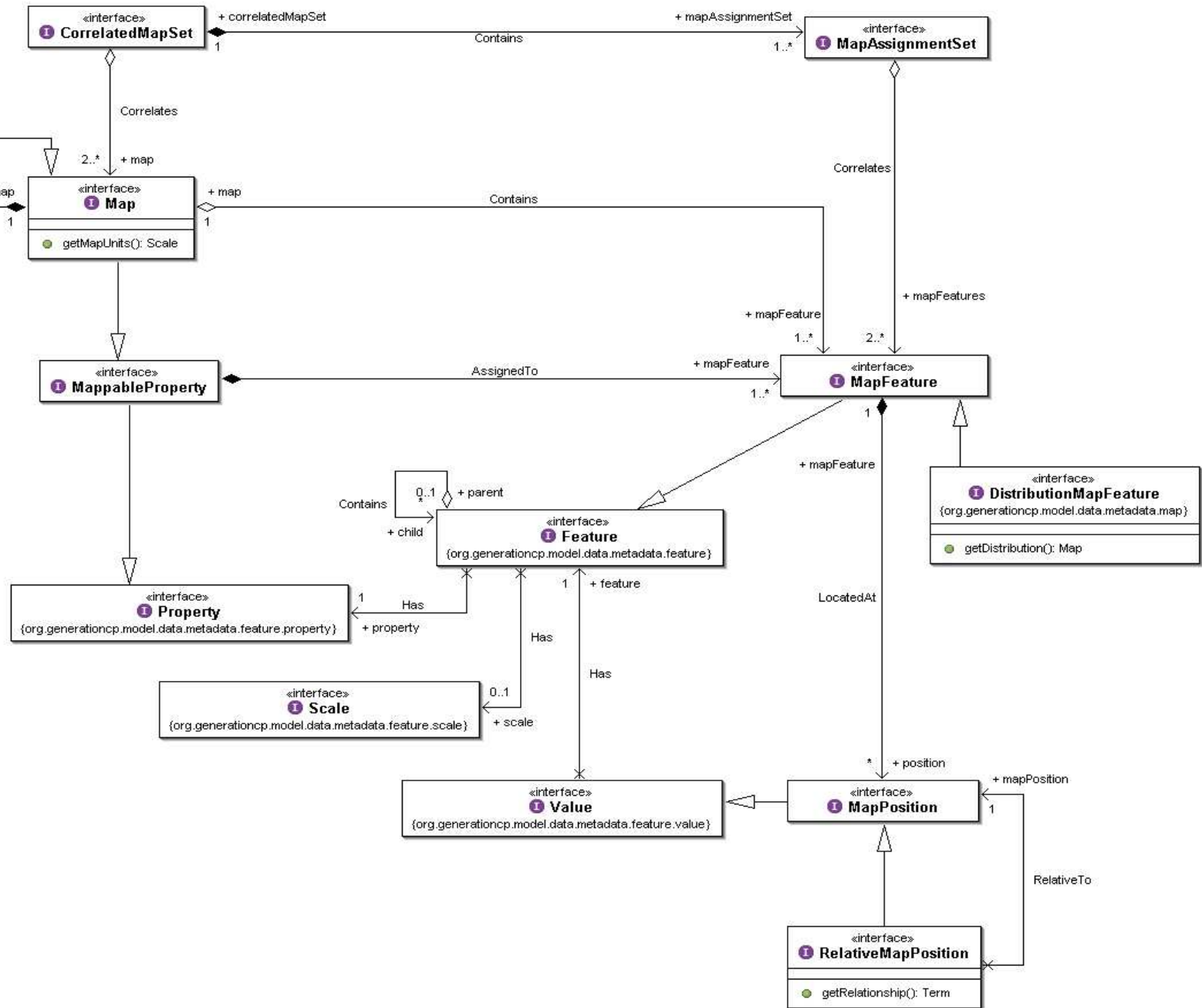
# 1. Mapping Middleware Module

- The Mapping domain model was completed and published as an Eclipse UML document
- A module prototype was developed in Java

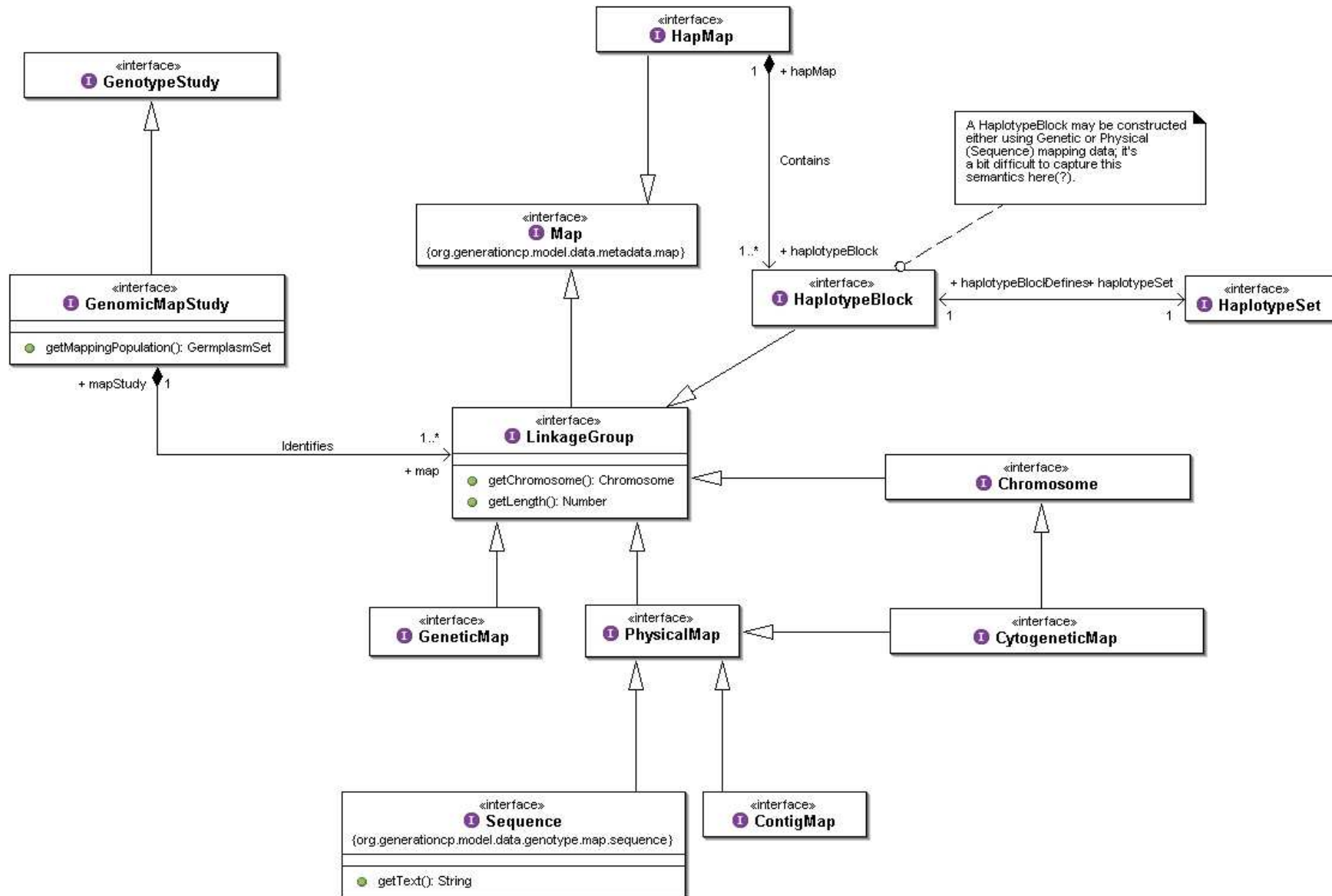
# Metadata Map Model

The abstract concept of a geometric Map is defined here in the metadata, for reused in both biological (genetic) mapping and geographical information systems mapping.

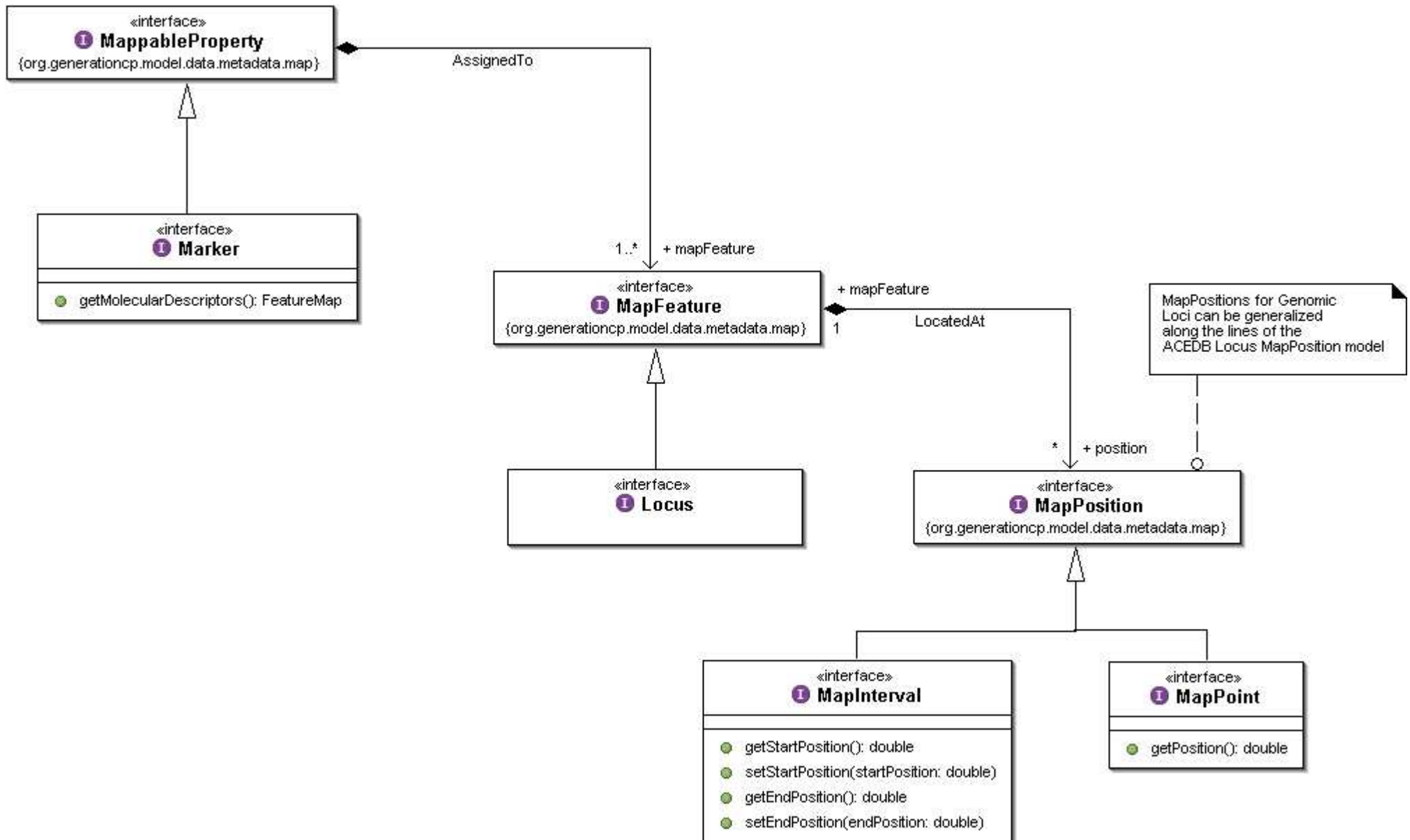
A MapLayer is an abstraction of a defined aggregation (subset) of MapFeatures (a kind of SubMap of filtered MapFeatures)



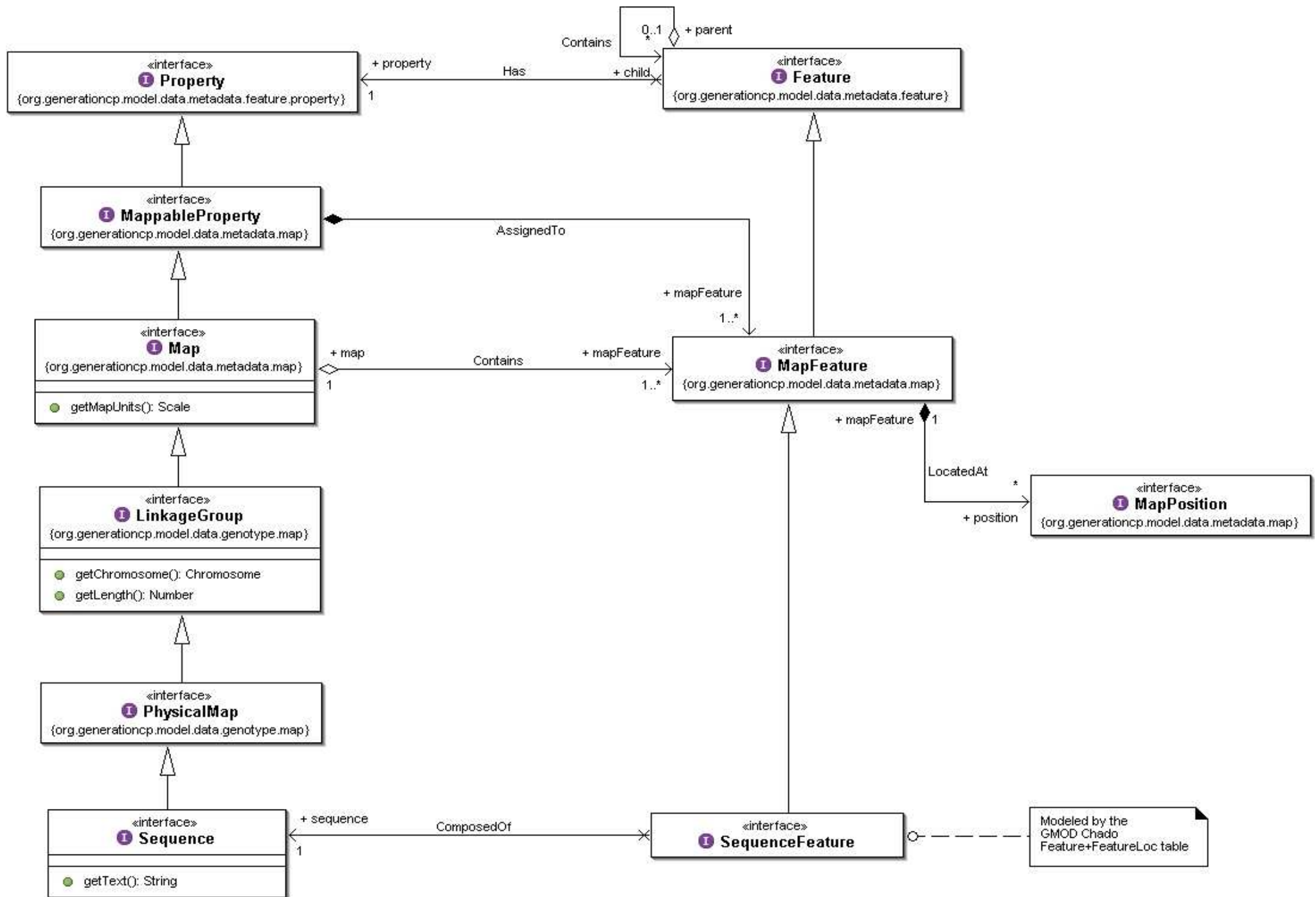
# Genomic Map Domain Model



# Map Locus Model



# Genomic Sequence Domain Model



## 2. Database adaptors

### 2 types of databases

#### Generic databases

- CMap
- GBrowse
- Chado (IRRI)

#### Specific databases

- TropGene
- Gramene (QTL)
- EMBL

## **2 types of database connection**

- Local : Hibernate
- Distant : Biomoby – EBI web services

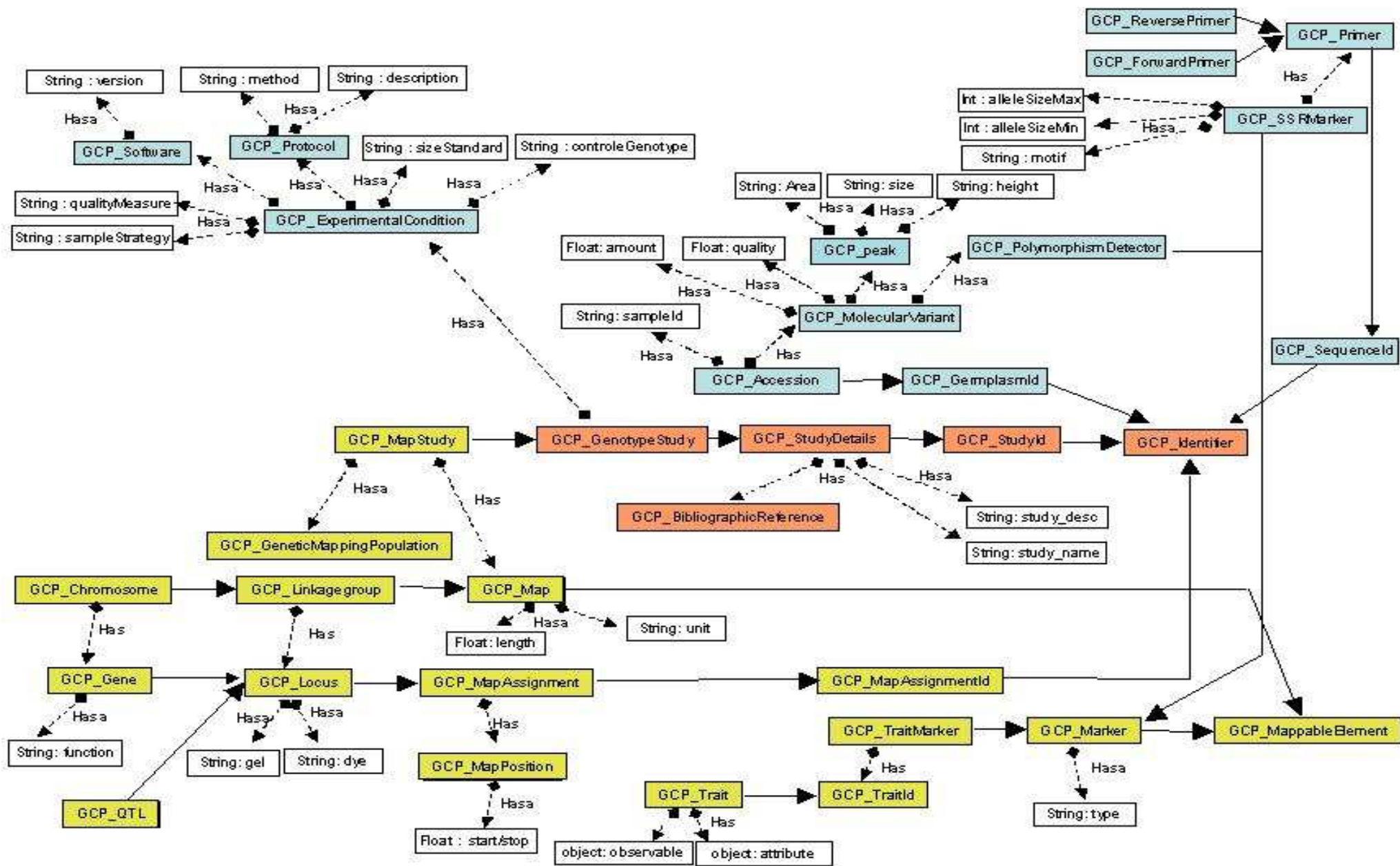
## **Generic databases**

Each team using these generic databases can directly connect and use the Web Pantheon Application

## **Specific databases**

Need to develop wrappers : local or web services but it's work

# Mapping GCP BioMoby Ontology



# 3. Generic Web Application

Web Application Interest :

- To respond quickly to specific use cases
- Feedbacks from users
- No needs tools installation
- Conviviality
- Possibility to integrate existing Web map viewers

## **4. Connection to generic Map Viewers**

- CMTV
- CMap
- GBrowse

**Web Pantheon available by internet**  
**(demonstration by Alexis)**