GML – Geography Markup Language

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- **Language** for modelling, transfer and storage of **spatial data**
- Based on **XML**
- Specification defined by **XML schemas**
- GML file = XML (text) file
- Current version 3.2.1
- ISO 19136:2007
- http://www.opengeospatial.org/
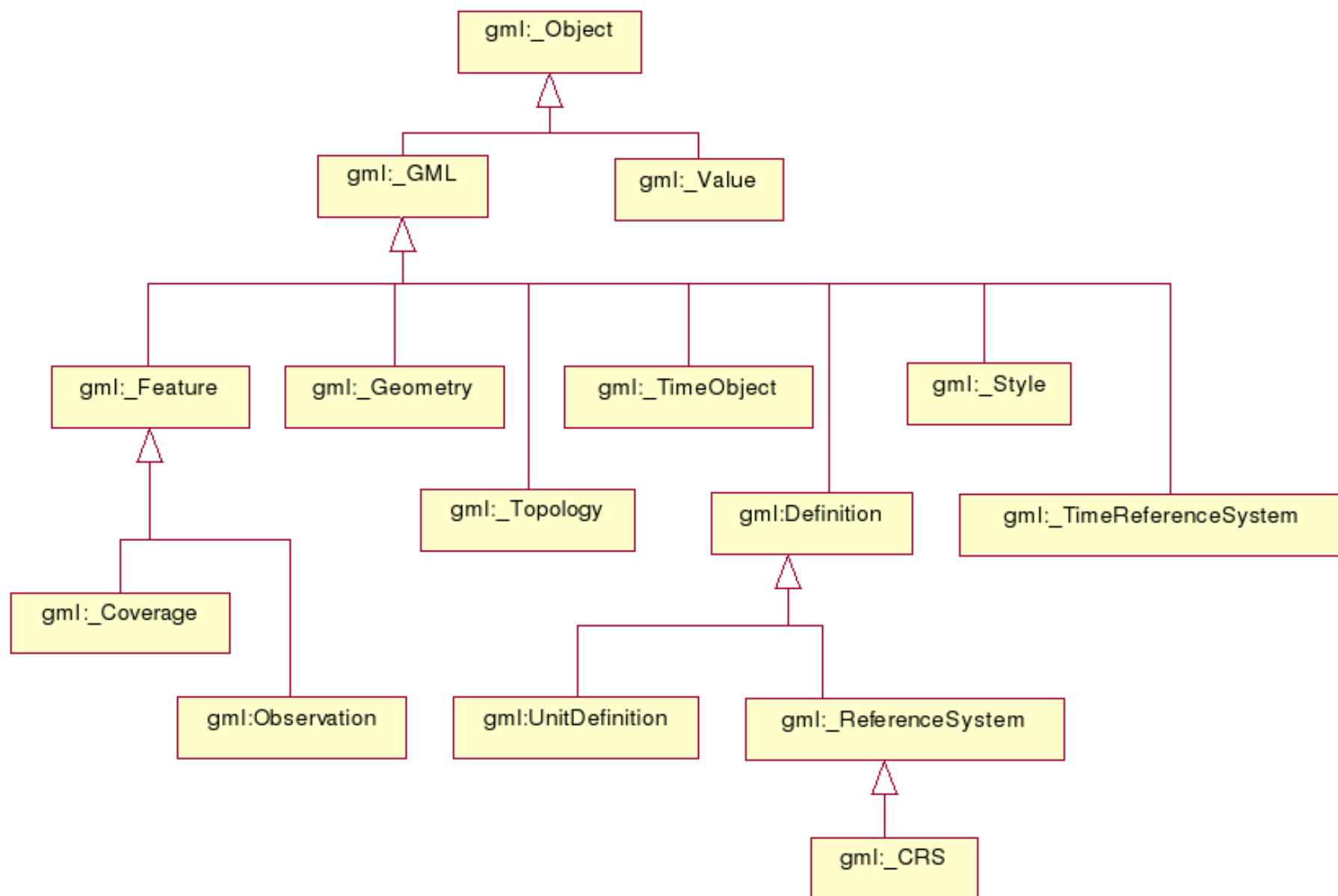
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XSD – XML Schema

- Defines tags
- Defines attributes
- Defines tags order
- Defines rules for tags hierarchy
- Defines cardinality
- Defines restrictions on values
- Allows to validate documents

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- **GML v.2** consists of 3 basic schemas:
  - **Geometry.xsd** – defines geometric part of feature
  - **Feature.xsd** – defines main model feature-property
  - **Xlink.xsd** – defines ways how to link elements
- **GML v.3** is extended with other **dalších 25** schemas
  - Compatible with GML v.2
  - Several profiles - Simple Features, City GML, ...

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- Feature
  - Geometry
  - Topology
  - Temporal

- Collection

  - Geoups of features
  - Spatial reference system (Coordinate reference system)

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GML – Geometry

- Point, line, polygon
- Curves, arc, ellipse, clothoide
- Parametrical surfaces
- GRID
- Affine transformation
- Agregation, composition

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GML – Interesting capabilities

- Default styling
- Observations
- Moving objects
- Animation (defined by SMIL (Synchronized Multimedia Integration Language)
- User defined spatial reference system

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GML - Profiles

- Define own profile - own language that is compatible with GML
- We can define for example complex feature (building)
- Profile can contain several definitions that restrict features (or example topoligal conditions)

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GML - Used sources

- OGIS. GML 2.0

- OGIS. GML 3.0

- OGIS/ISO. GML 3.2.1

- Duchoslav T. Geography Markup Language 3.0, VŠB-TUO, Seminář, 2005

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