ISO TC 211

Quick Overview of ISO 19107 standards
Spatial Schema

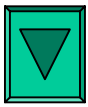Alberto Belussi

Novembre 2003

Overview of ISO TC 211 Data Model

ISO TC 211

General Feature Model (GFM) in UML

Spatial Schema

UML Classes (GM_ *)

Relate Operators
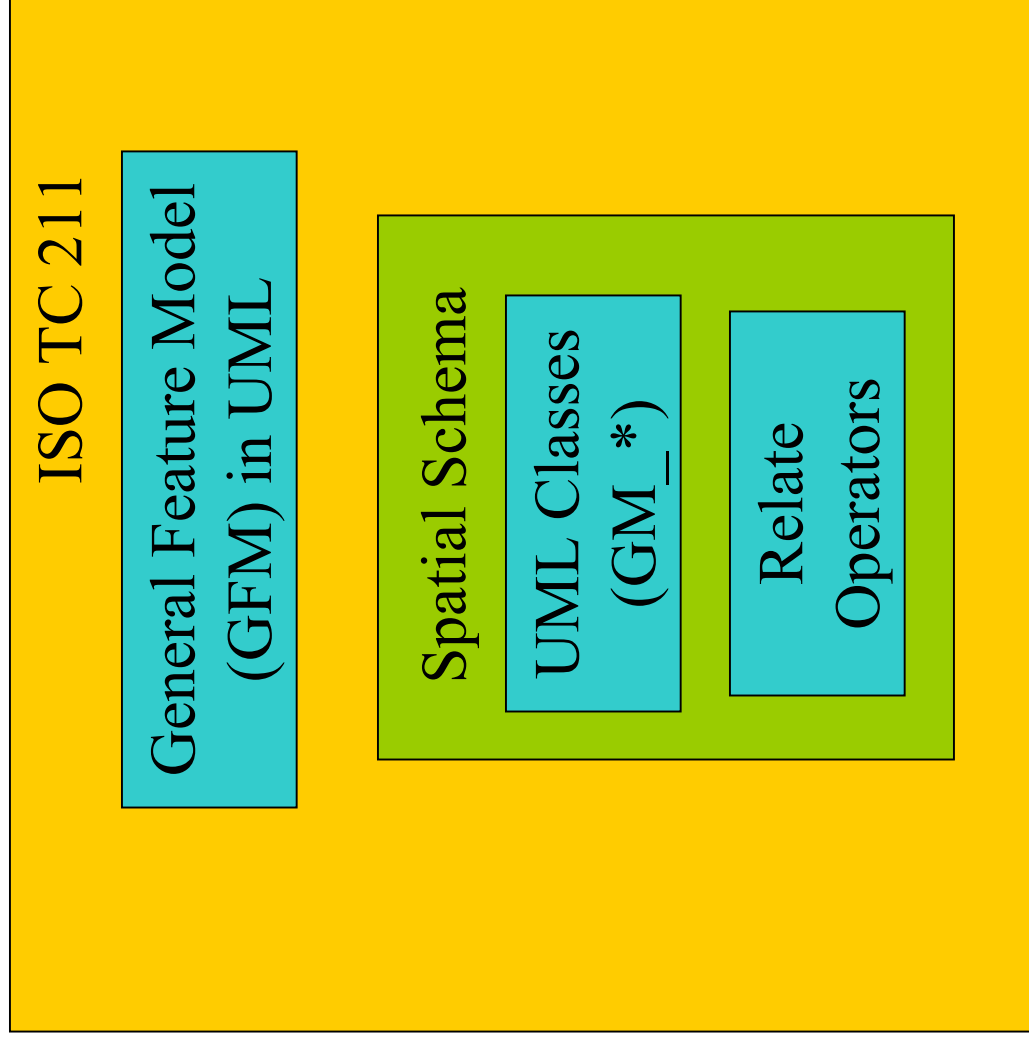
The General Feature Model (GFM)

GFM contains the following constructs:

- Feature Type: "a feature type is an abstraction of real world phenomena"

- Attribute: thematic and spatial attributes

- Association between feature types

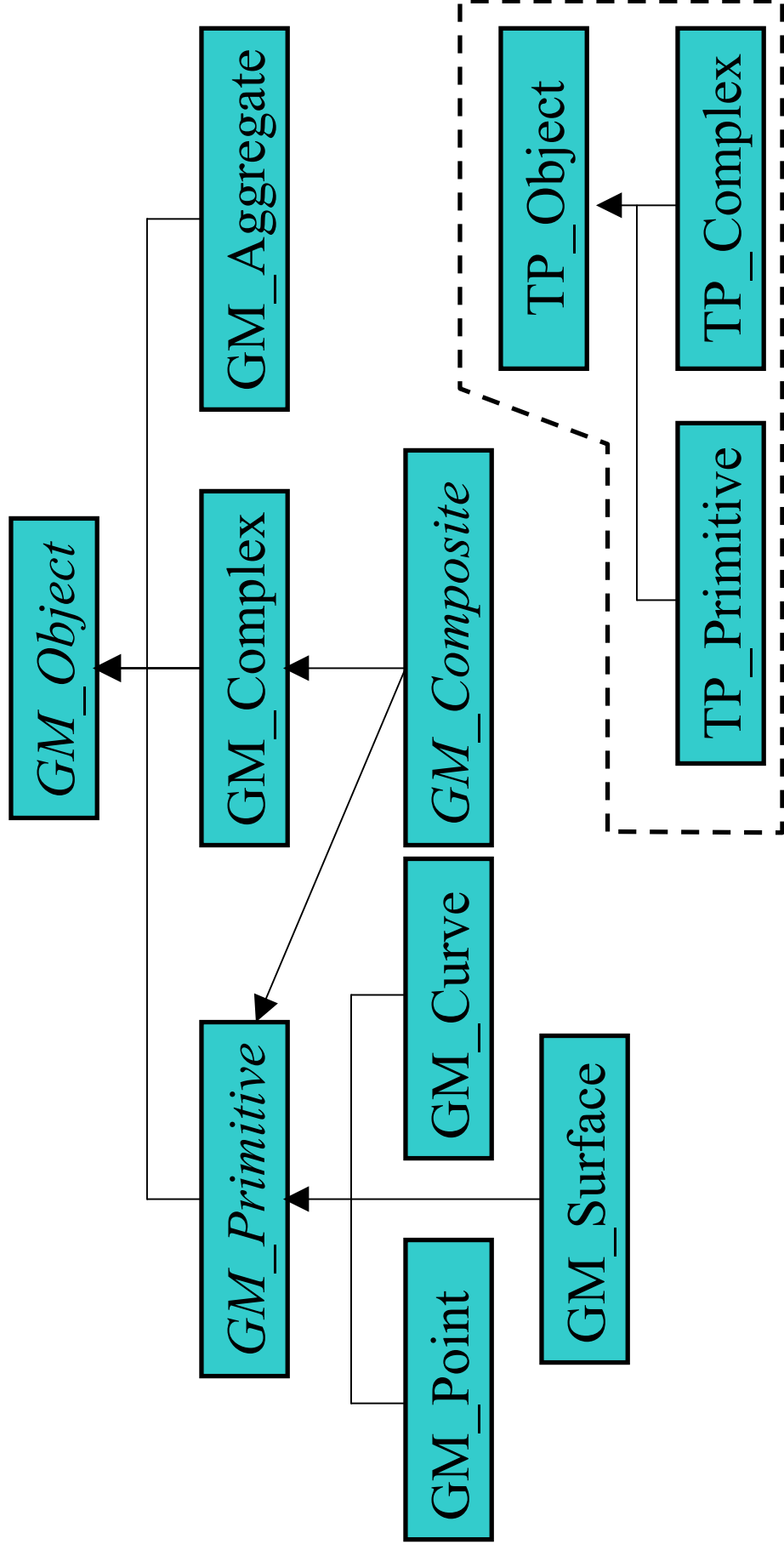- Generalization and specialization of feature types

- Constraint

DB Content

Feature instances

DB Schema

Feature types and their properties + constraints

Reality: phenomena
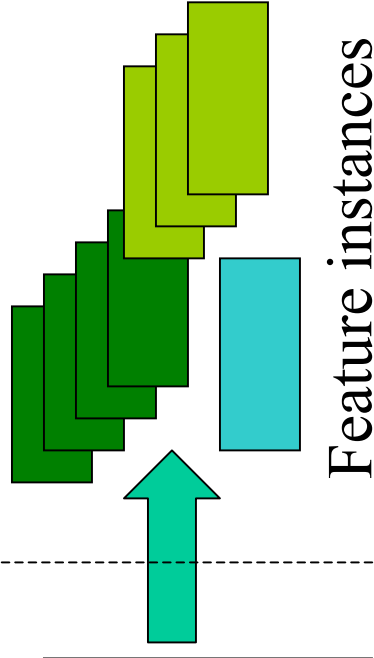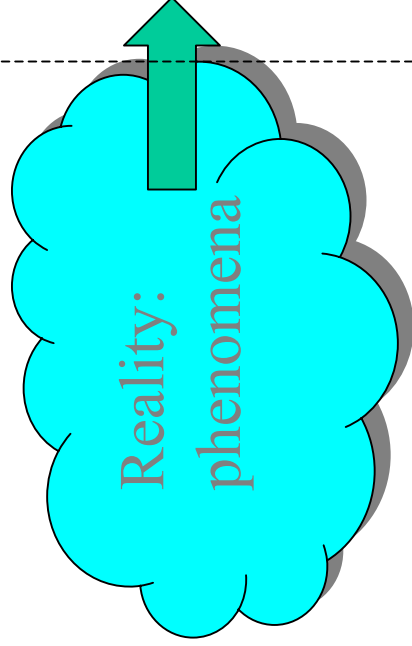
Overview of the Spatial Schema
Geometric Classes

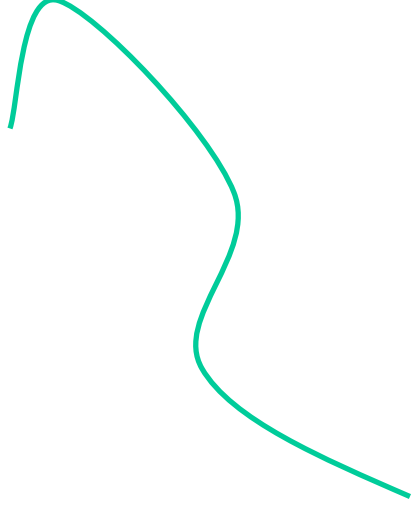Geometric classes of the Spatial Schema (ISO 19107)

GM_Primitive

Primitives are geometric objects representing connected pointsets. GM_Primitive is the parent node of three classes: GM_Point, GM_Curve and GM_Surface.
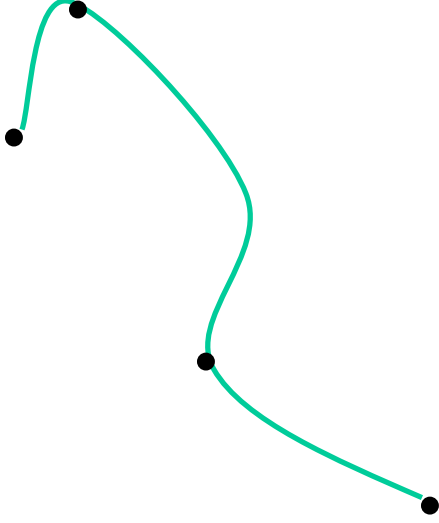
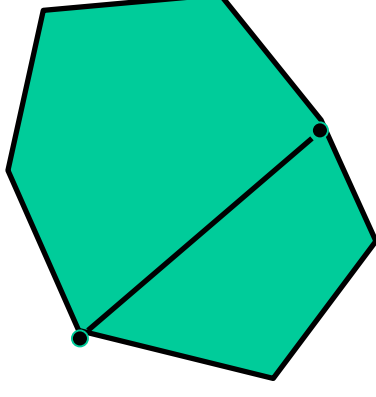GM_Surface

GM_Curve

GM_Point

GM_Composite

Composite objects are set of primitives representing a primitive decomposed in its components. They are always dimensionally homogeneous.
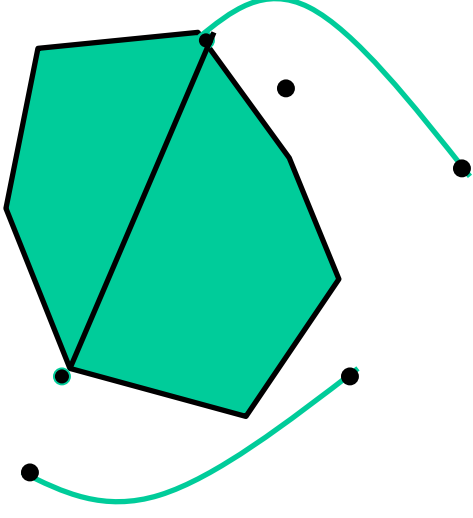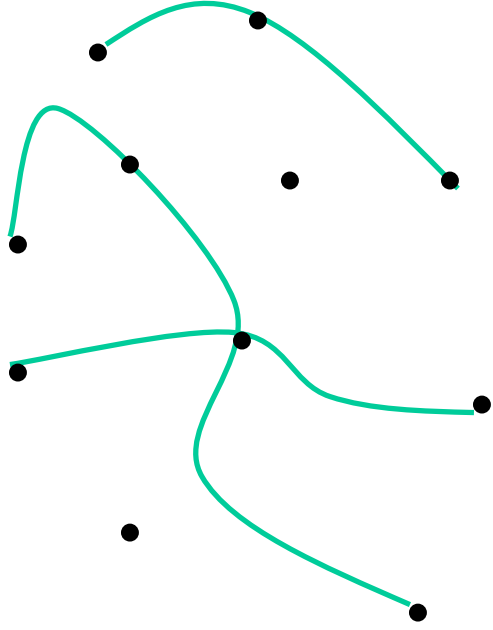
GM_CompositeSurface

GM_CompositeCurve

GM_Complex

Complex objects are set of primitives satisfying the following spatial constraints:
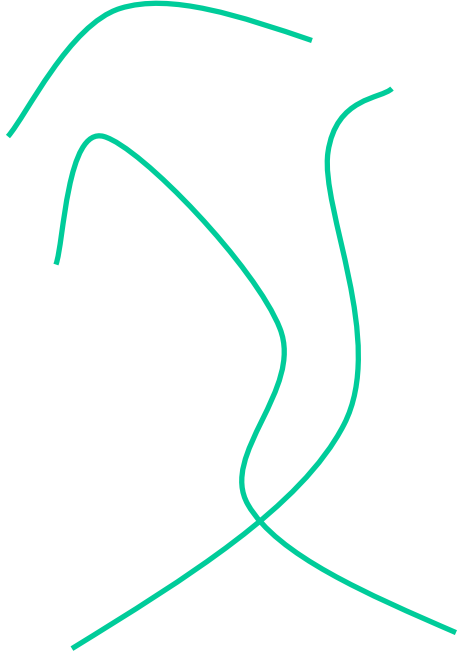
a. the primitives belonging to a complex are disjoint

b. if a primitive belongs to the complex also its boundary belongs to the complex
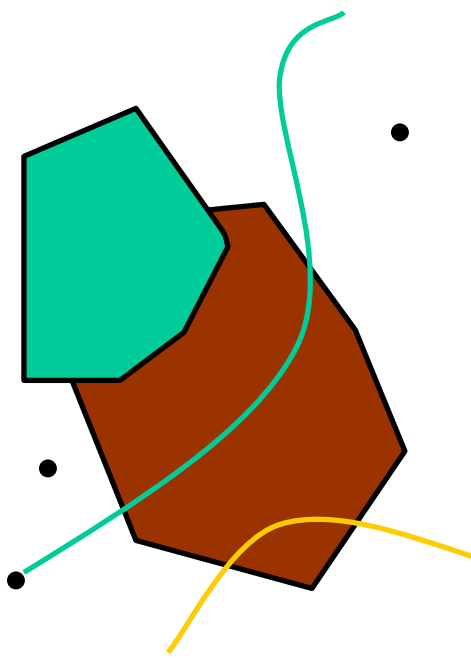
GM_Aggregate

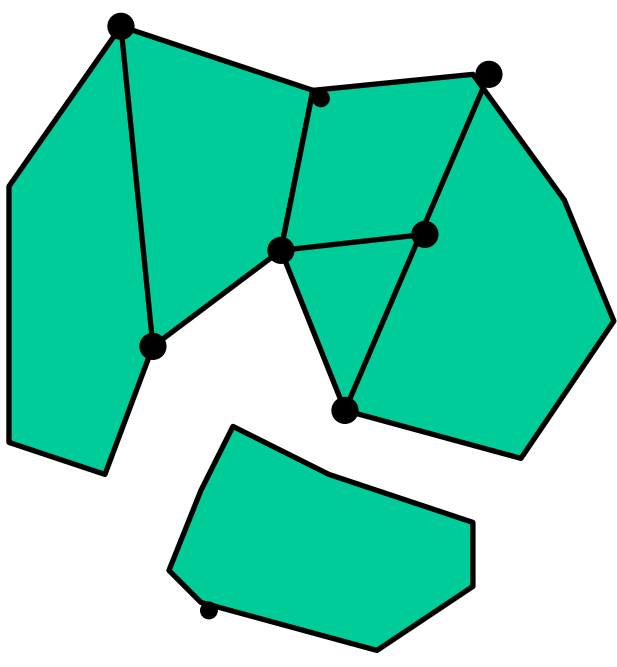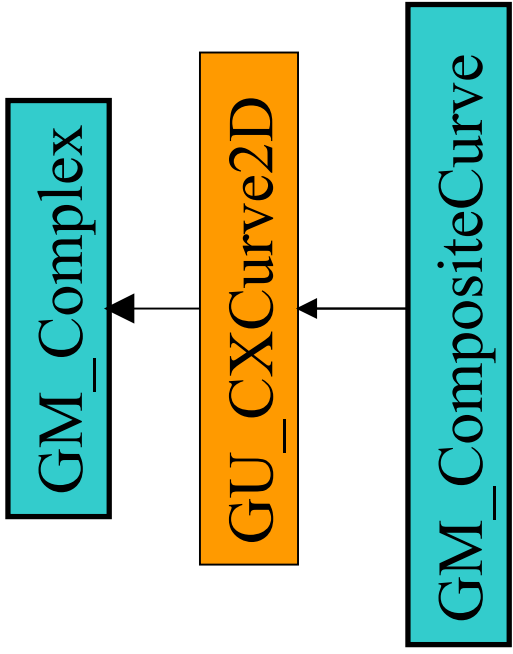Aggregate objects are sets of primitives with no constraints.
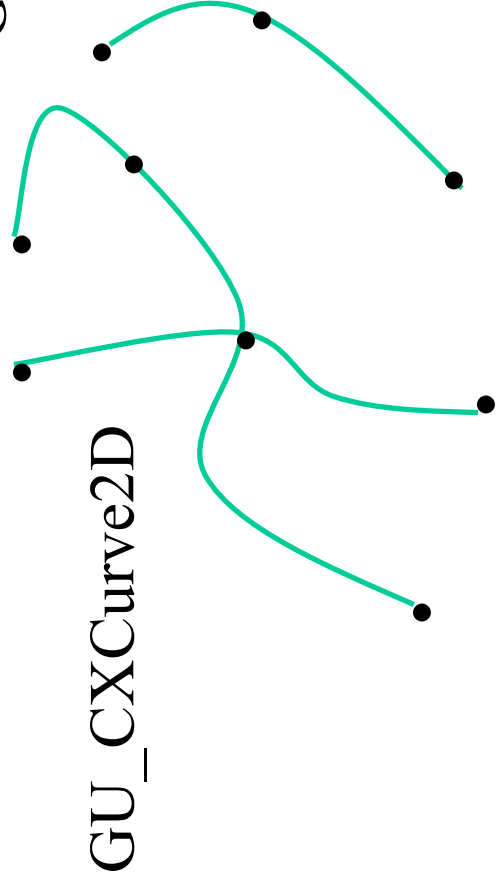
dimensionally
homogeneous

non dimensionally
homogeneous

Homogeneous Complexes

GU_CXSurface2D

GU_CXCurve2D

GM_Complex

GU_CXCurve2D

GM_CompositeCurve