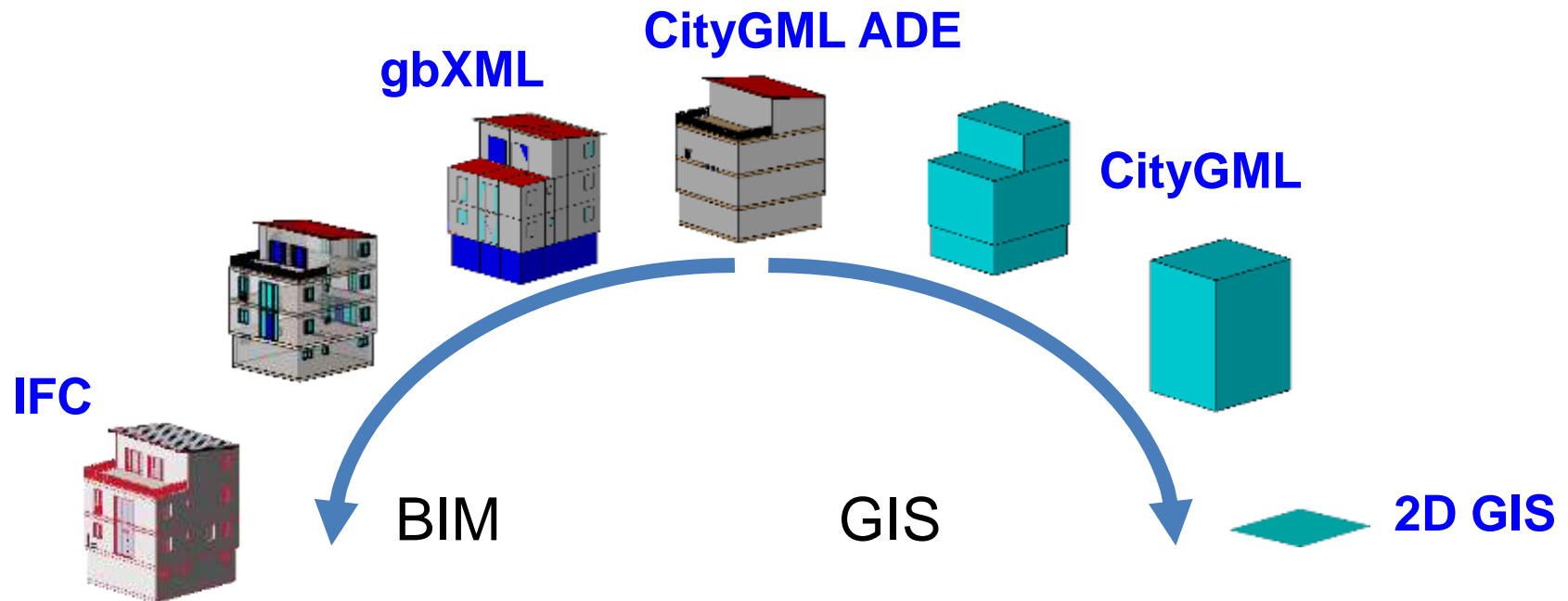# Scale-adaptive geometry processing BIM&GIS – Transition between GIS and BIM

Karl-Heinz Häfele, Joachim Benner

Institute for Applied Computer Science (IAI)

www.kit.edu

# Standardized BIM and GIS data models



# Building Information Models

# Central BIM and GIS differences
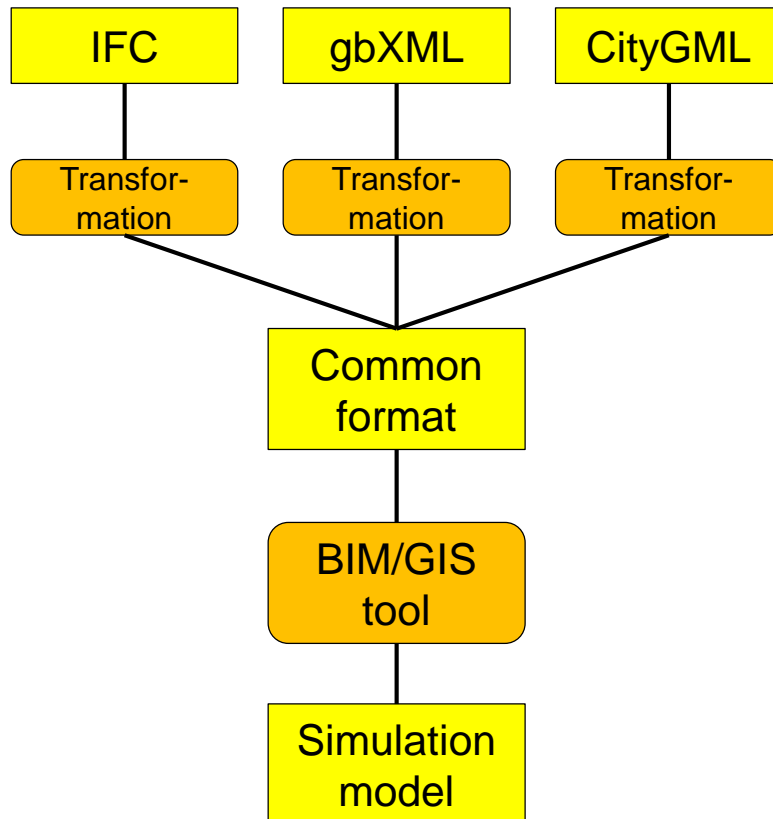
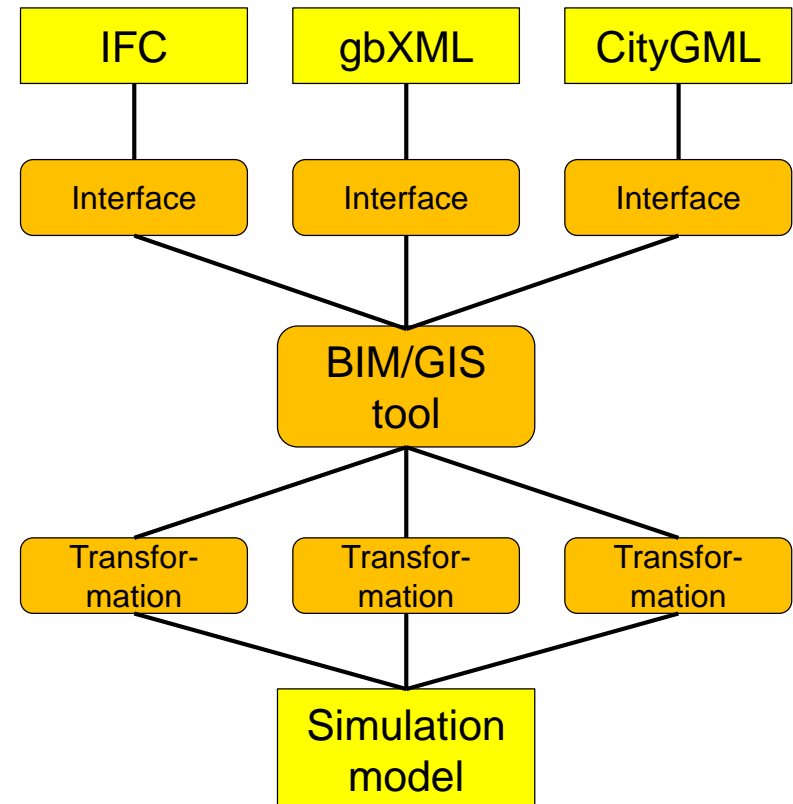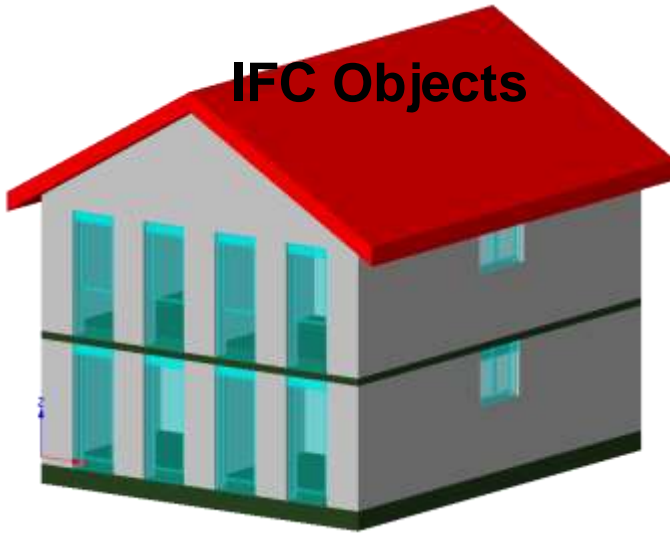| | GIS | BIM |
|---|---|---|
| Geometric modelling style | **"Surveyor" like:** Explicit representation of exterior or interior surfaces | "**Civil engineer" like:** Parametric representation of volumetric building elements |
| Georeference | Global coordinate system | Hierarchy of local coordinate systems, located in a global system |
| Modelling method | Automatic derivation from surveying data | Manual generation with CAAD tools |
| Availability | Urban scale | Single building scale |
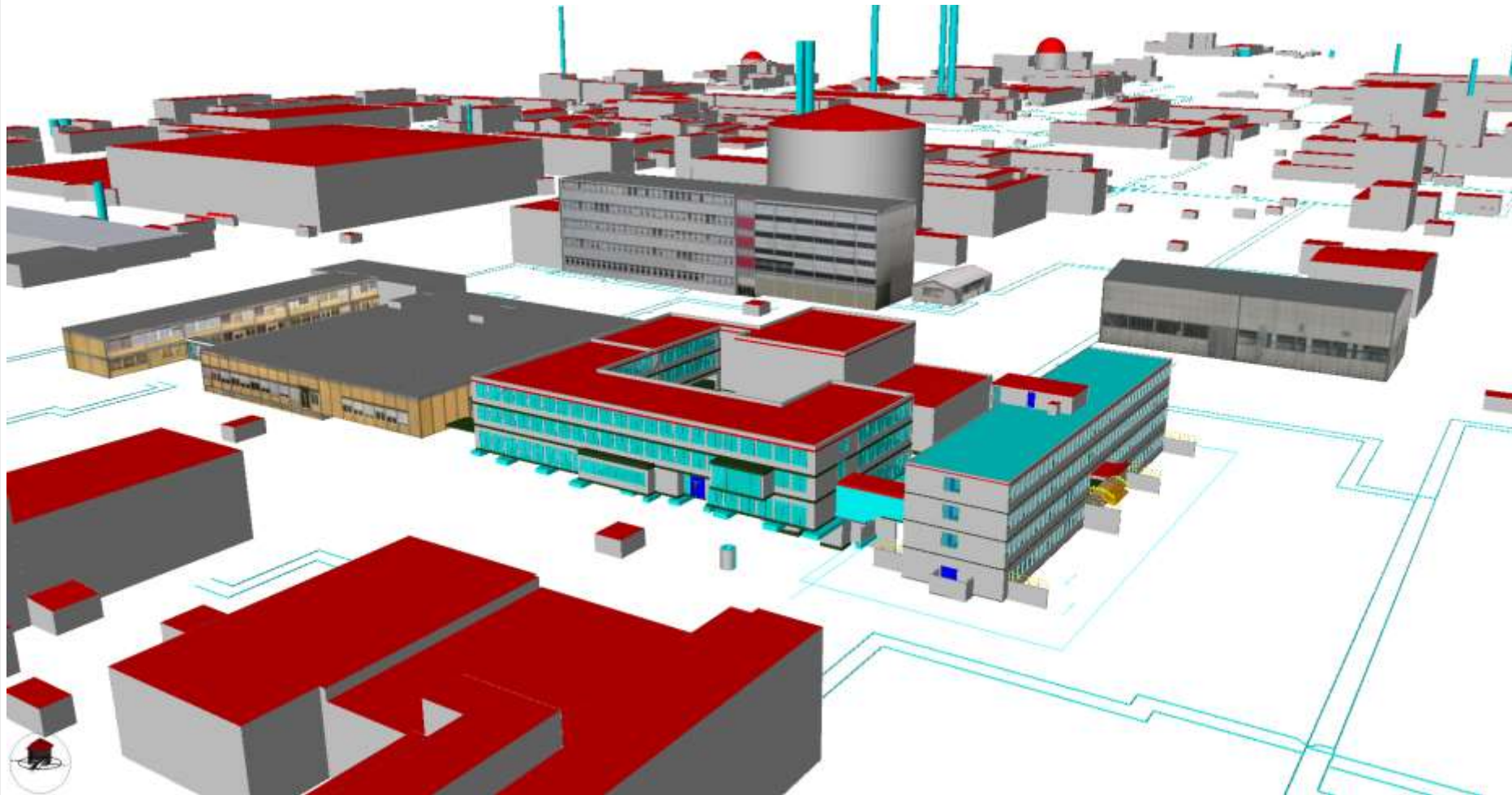
IFC + CityGML + LandXML
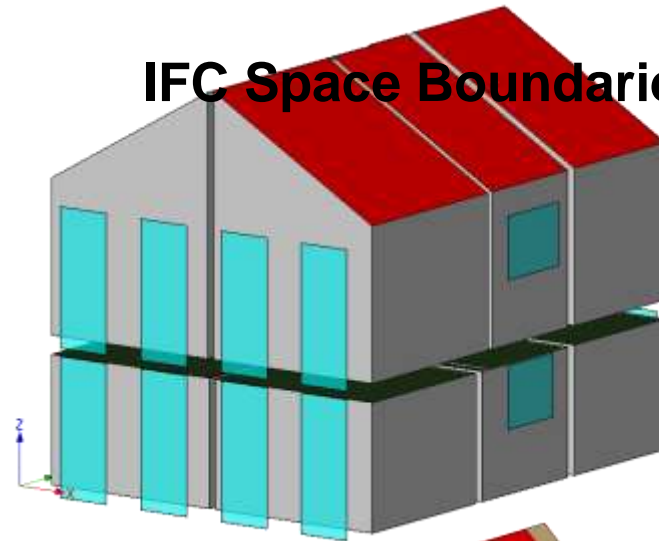
# BIM / GIS transition

## Transformation scenario

IFC → Transformation
gbXML → Transformation
CityGML → Transformation

→ Common format → BIM/GIS tool → Simulation model

## Integration scenario

IFC → Interface
gbXML → Interface
CityGML → Interface

→ BIM/GIS tool → Transformation / Transformation / Transformation → Simulation model

IFC Objects

IFC Space Boundaries

CityGML LoD 4

gbXML

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