Bericht rund um die SIG 3D

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3. April 2009

27. Plenarsitzung der SIG 3D, Bad Godesberg

Berichte

1. Imagina 2009 Conference in Monaco
2. Geoweb 2009 Conference
3. OGC TC Meeting in Athen, 30.3.-2.4. 2009
4. EU COST Action TU0801:
   Semantic Enrichment of 3D City Models for Sustainable Urban Development
5. AK 3D-Stadtmodelle der DGPF und DGfK

Ausstellung im Foyer – „Urbanization of Monaco Bay“

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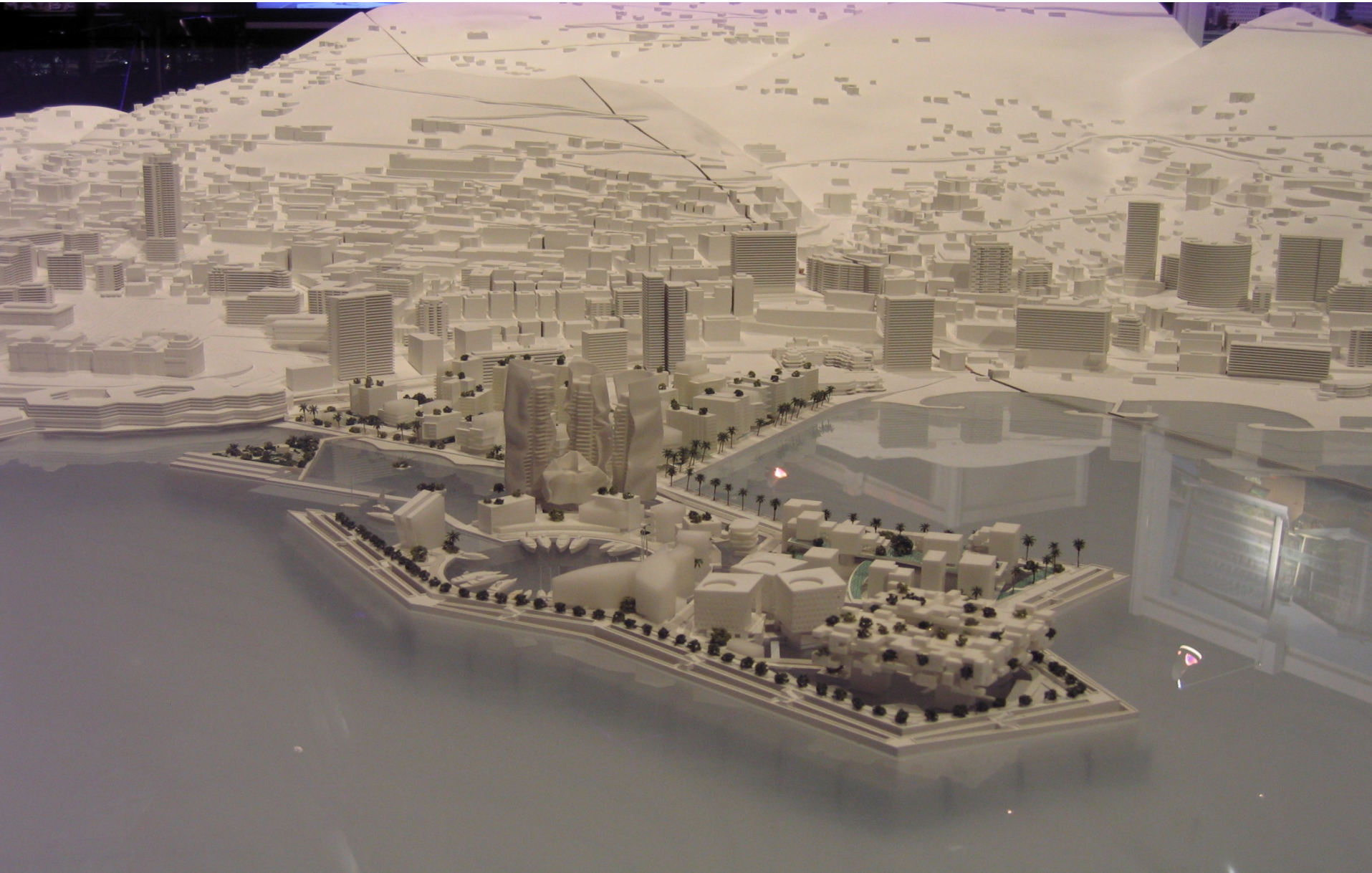


CityGML-Erweiterungsvorschlag

- Einladung zur Teilnahme
  Termin: 19./20. November

- Call for Papers

  Ein Schwerpunktthema ist
  „Modellierung / Einsatz von Stadtmodellen“

bis/until	
30.04.2009	Kurzfassung des geplanten Vortrages / Extended summary due (maximal 3 Seiten / maximum 3 pages)
15.05.2009	Benachrichtigung der Autoren / Notification of acceptance
bis/until	
30.06.2009	Eingang des vollständigen druckfertigen Manuskripts / Camera ready paper due
01.09.2009	Versand des endgültigen Programms / Submission of the final program

➢ weitere Infos im Internet unter:

http://www.gds.uni-wuppertal.de/service
/veranstaltungen/11-workshop-sichtsysteme.html

Announcement & Call for Papers
for the Academic Program of

Geoweb 2009 – 3D Cityscapes

July 27-31, 2009 in Vancouver, Canada

Co-Organised by ISPRS WGs

- **III/4**
- **IV/8**
- **IV/5**

Deadline for Full Paper Submission:
14th of April 2009

www.geowebconference.org

3DIM report to TC

Carsten Rönsdorf
Non-chair, 3DIM (3D Information Management) DWG
Athens TC, 1 April 2009

Carsten.Roensdorf@ordnancesurvey.co.uk

Agenda

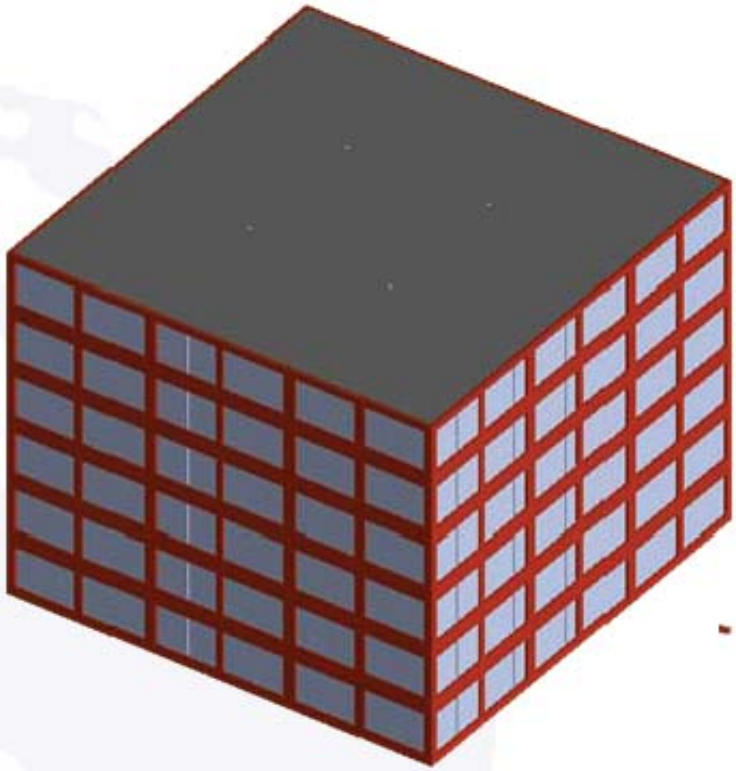
1. Scott Simmons:
   moving solid CAD data between CATIA and CityGML
2. Øivind Rooth:
   GIS in Government systems for the construction industry
3. Steffen Neubauer:
   3D Symbology Encoding for 3DPortrayal Services
4. Marie-Lise Vautier and Nicolas Lesage:
   Using CityGML: First results of BATI3D, IGN's 3D city models project

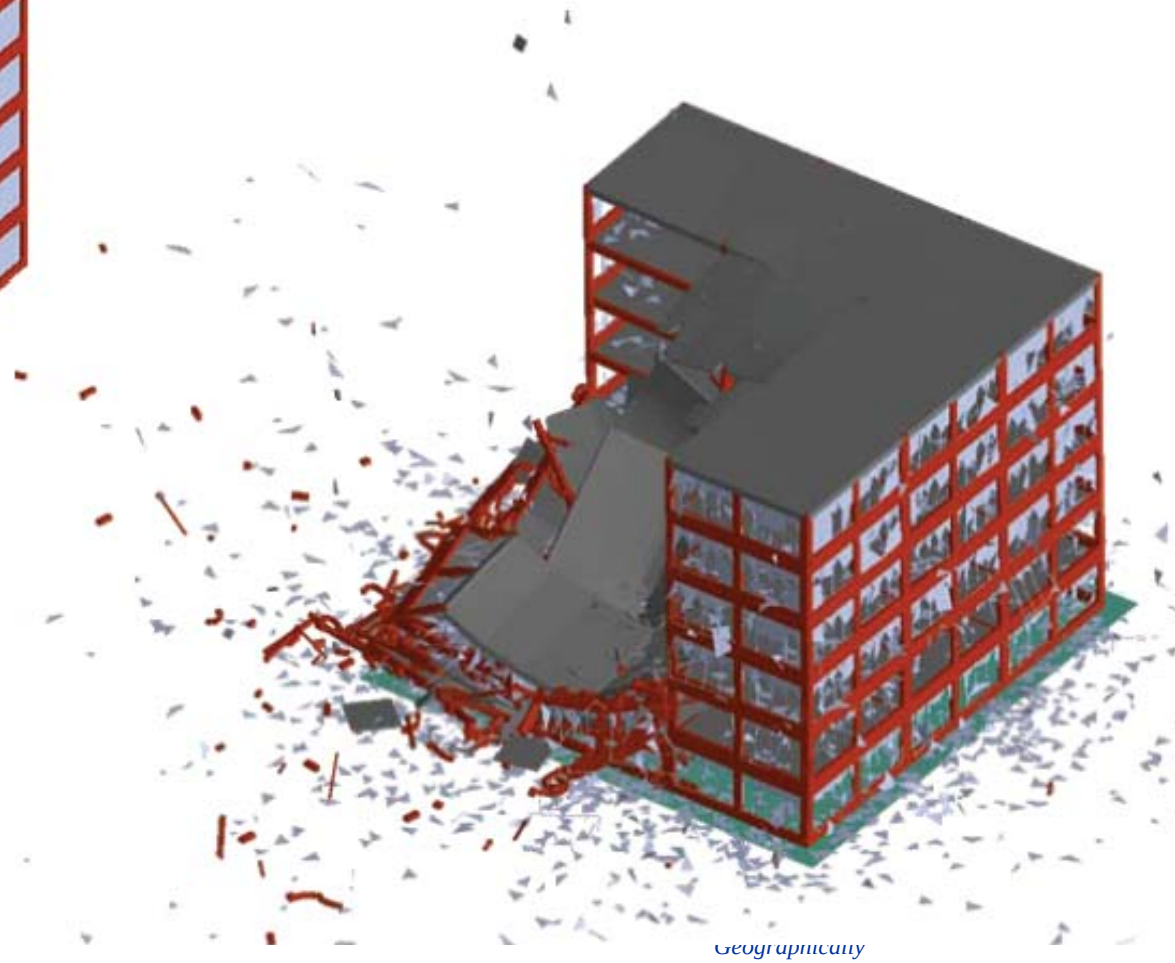
Break at around 10:00

5. Karl-Heinz Häfele, Clemens Portele, Carsten Rönsdorf:
   CityGML data modelling workshop

Scott Simmons

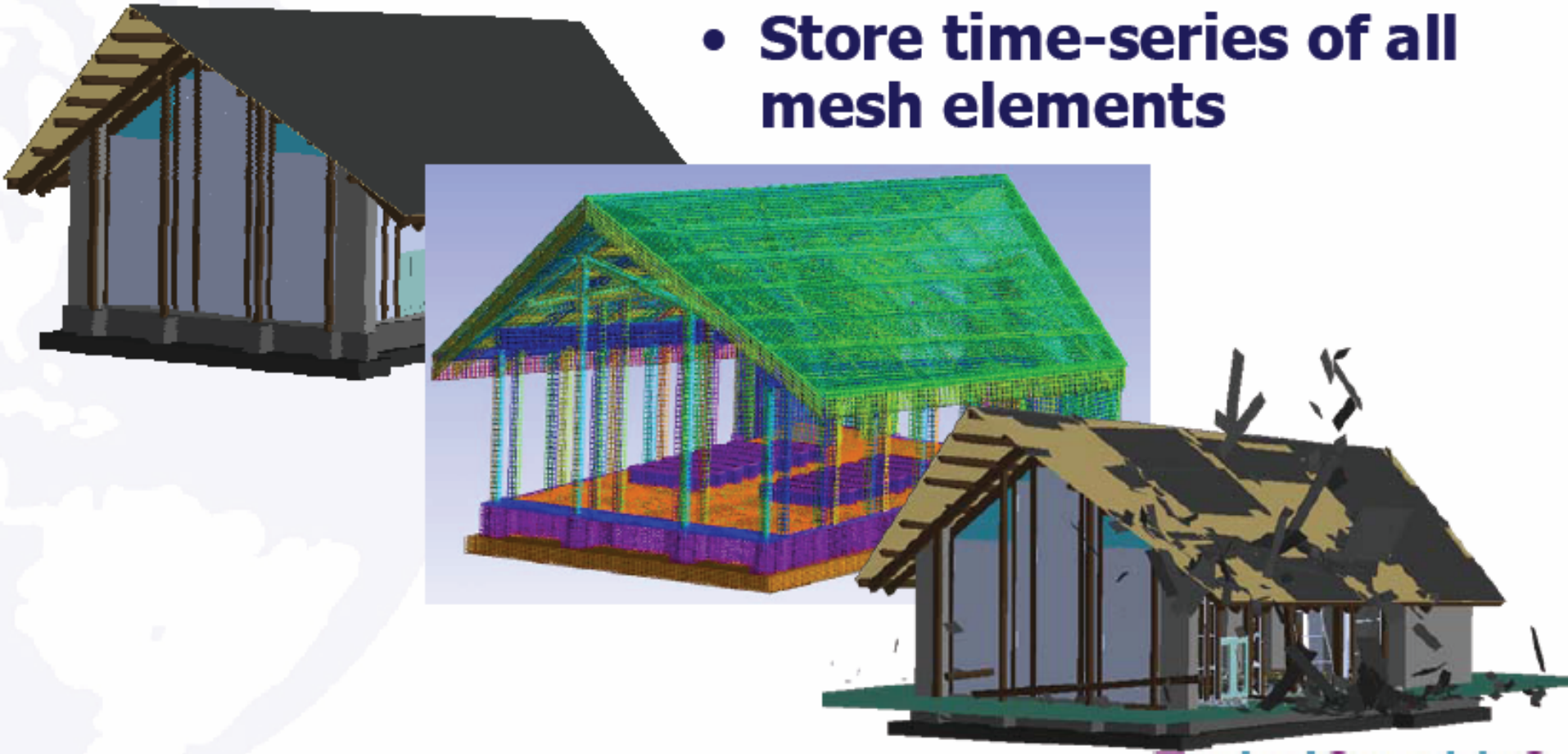
CityGML imported into
CATIA solid modelling CAD application
for simulation purposes





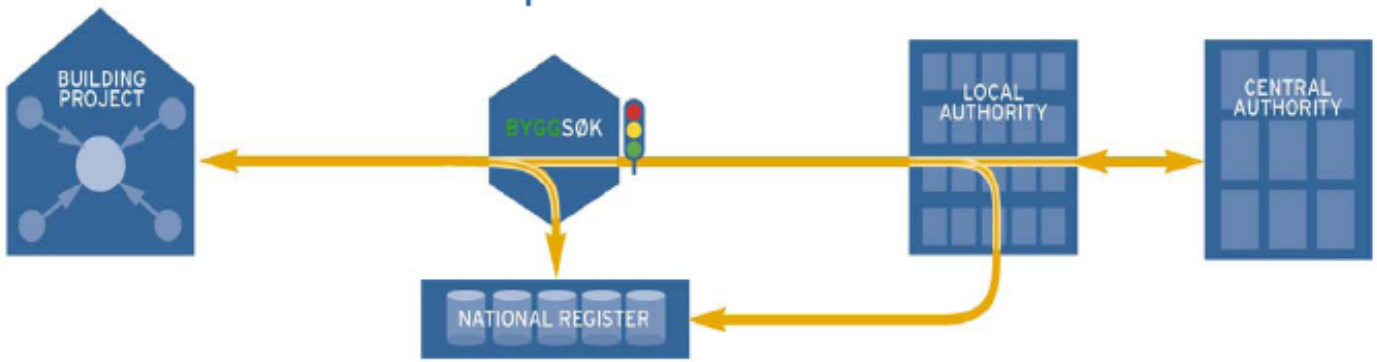
Current R&D: ADE for Simulation Data

- **Store mesh with elements tied to CityGML objects**
- **Store time-series of all mesh elements**



Øivind Rooth

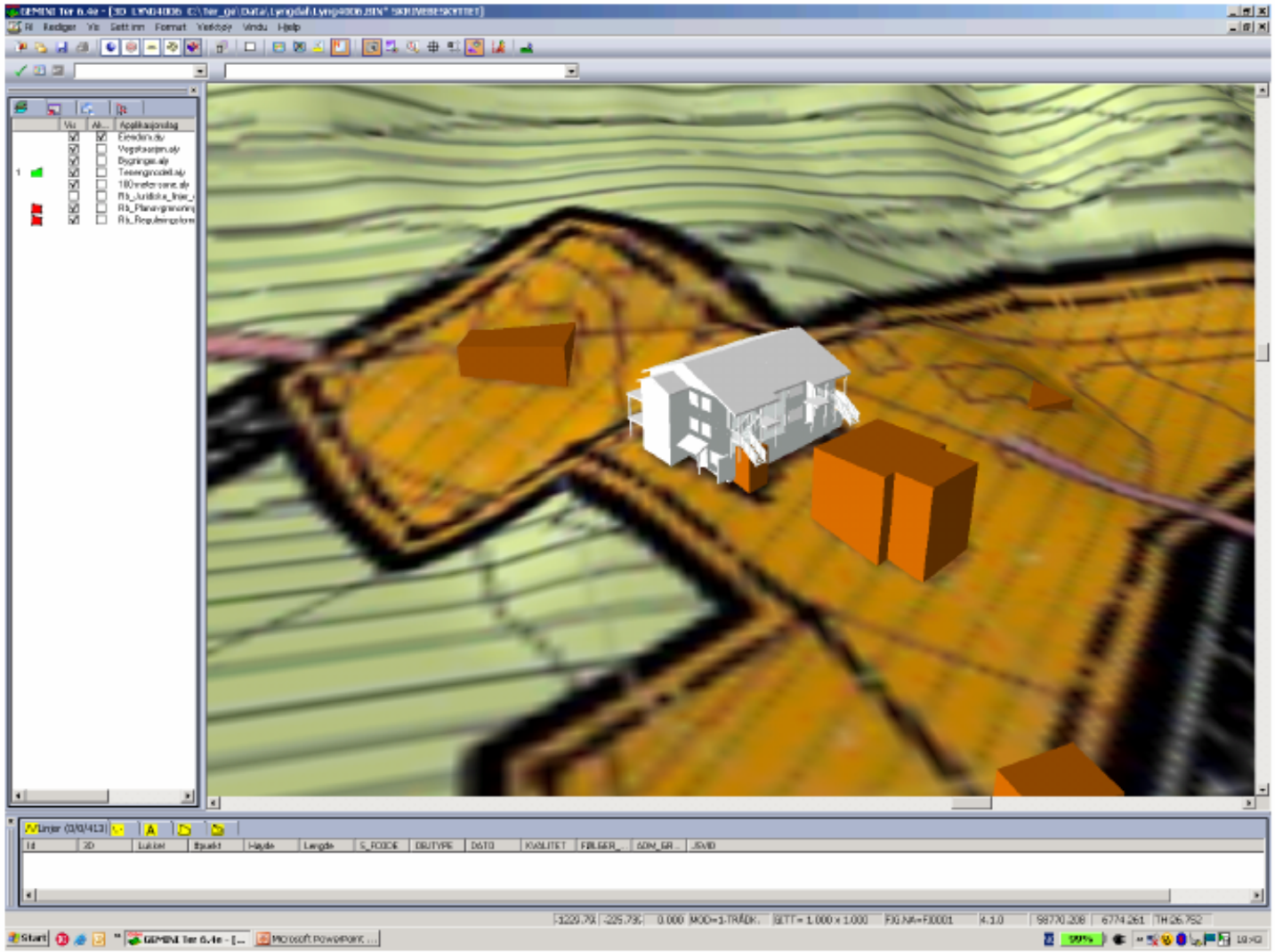
Electronic sharing and re-use of information
make the construction process more efficient
for all parties involved.



Norwegian system
for eGovernment

BYGGSØK

GIS and BIM can share information



Need pilot to demonstrate integration of BIMs into geographic context.

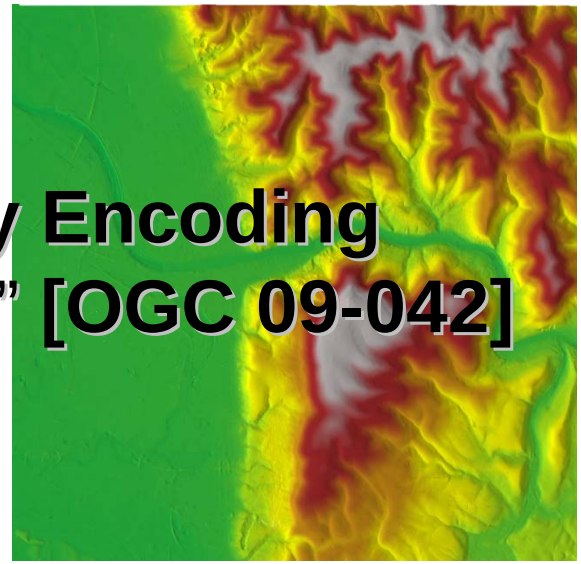
OGC

Helping the World to Communicate Geographically

3D Symbology Encoding: moving towards 3D GIS
Different interpretations of 3D-Geodata with the help of different Styles

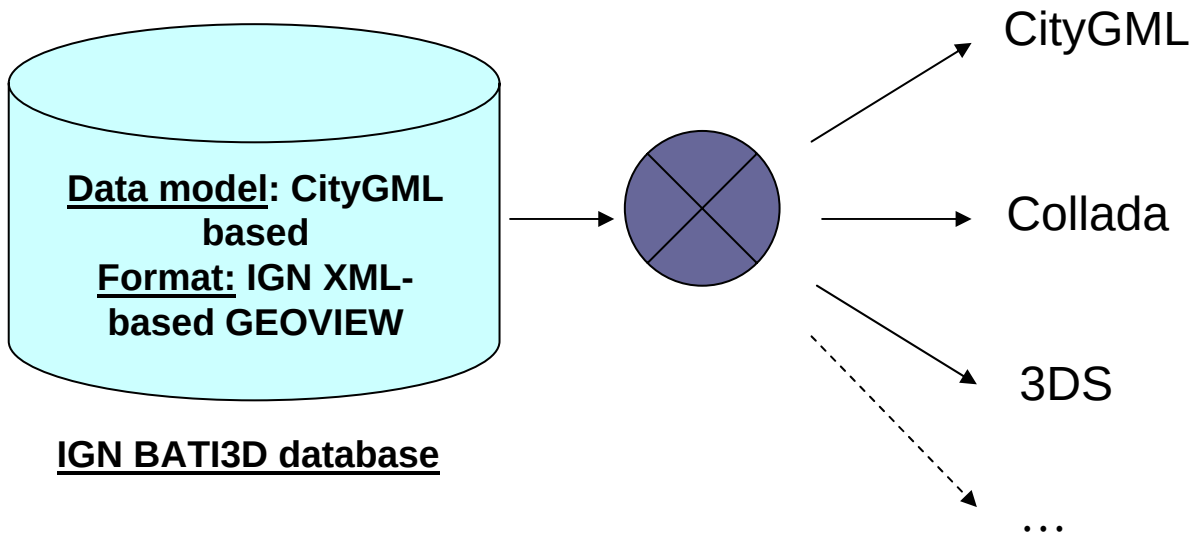
Steffen Neubauer

“3D-Symbology Encoding Discussion Draft” [OGC 09-042]



Marie-Lise Vautier

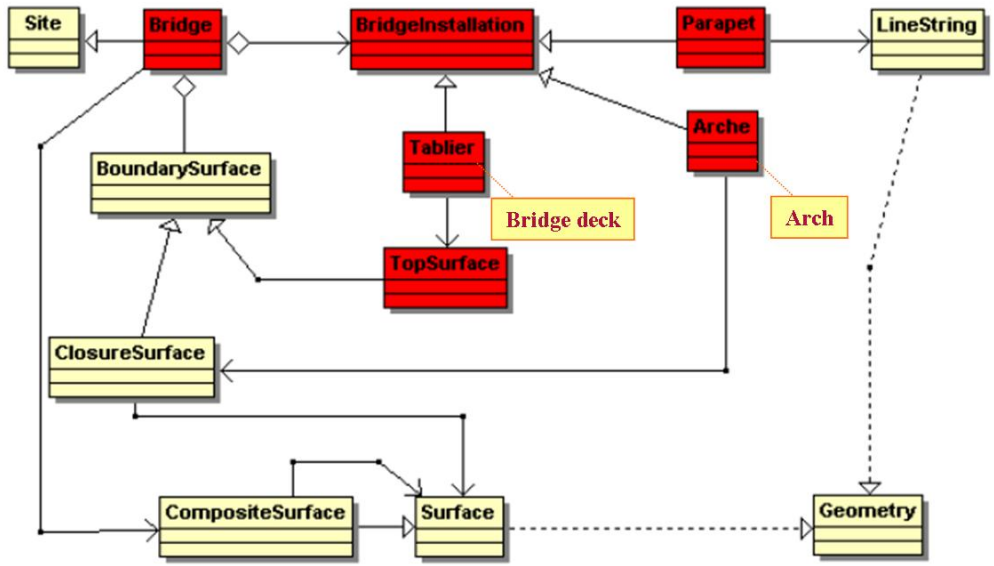
Modelling and encoding: Current situation



Plan to start production in mid 2009

New ADE's proposed

- Bridges
- Walls
- Tunnels
- Bottom slabs
- Stairs
- Hoovers



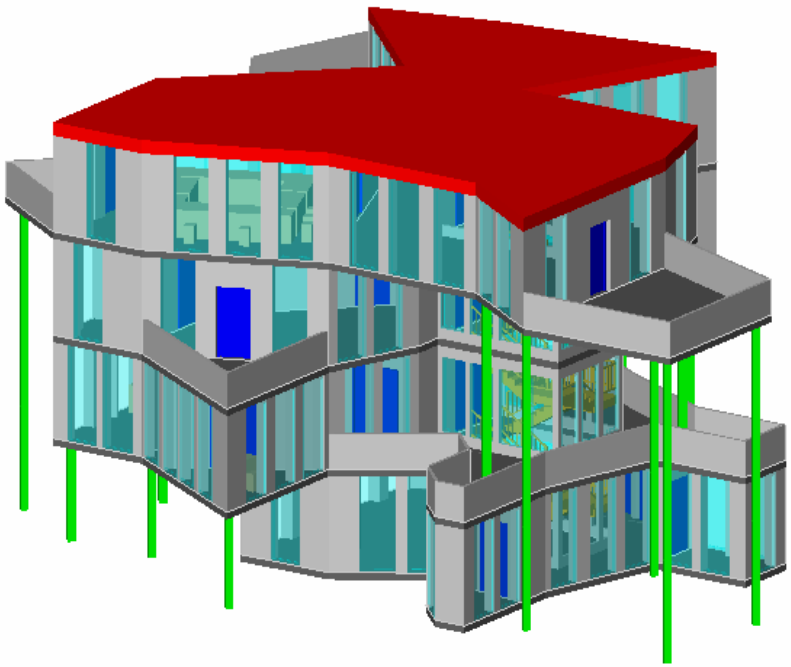
OWS6: Lack of definitions

Example: What is a building?

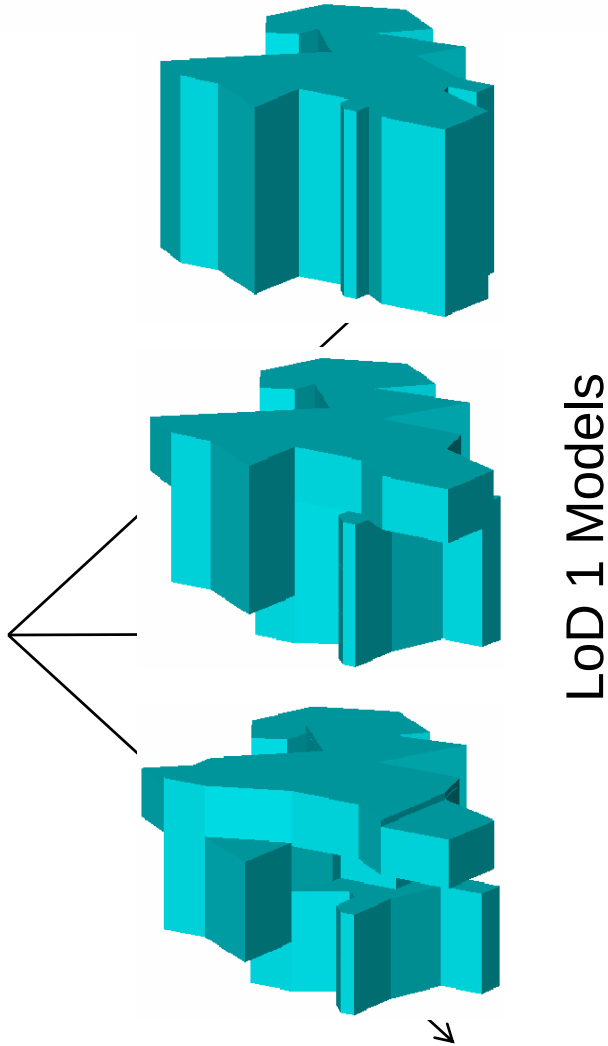
- In OWS-6 the source dataset uses the following definition for building “A free-standing self-supporting construction that is roofed, usually walled, and is intended for human occupancy (for example: a place of work or recreation) and/or habitation.“
- Is „a container used for the storage of liquids and/or gases that is not supported by a tower“ a building in CityGML? Building class „storage“ (1150) seems to indicate „yes“.
- This gets worse when trying to use the code lists ...

Modeling: LoD 1 from IFC

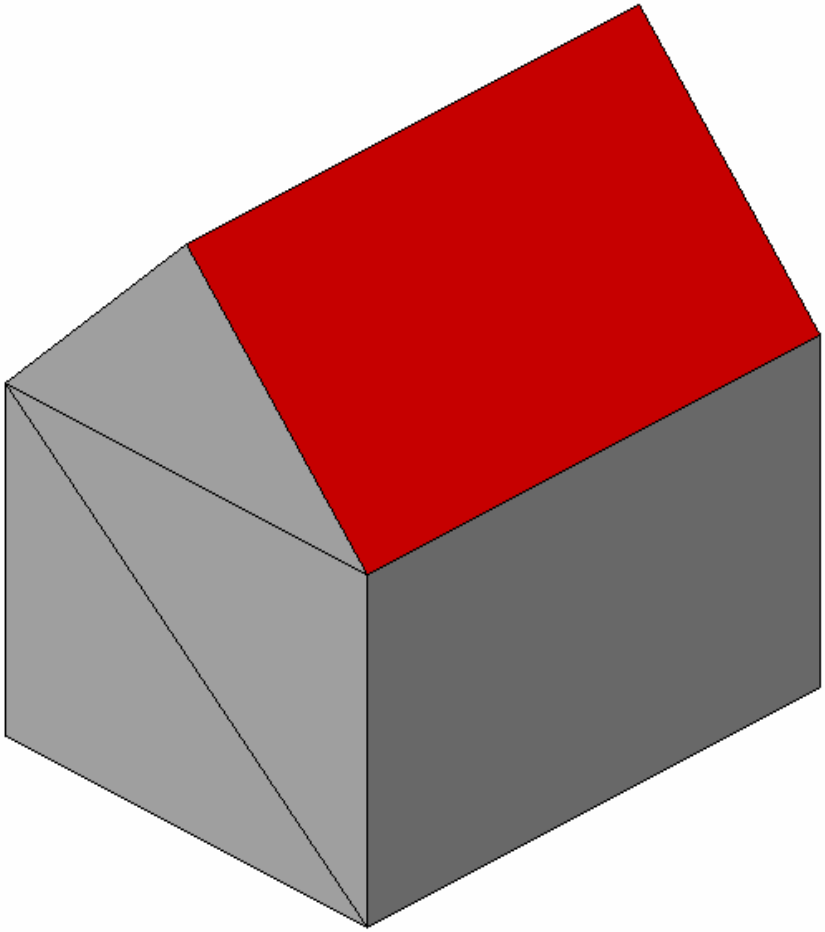
Karl-Heinz Häfele



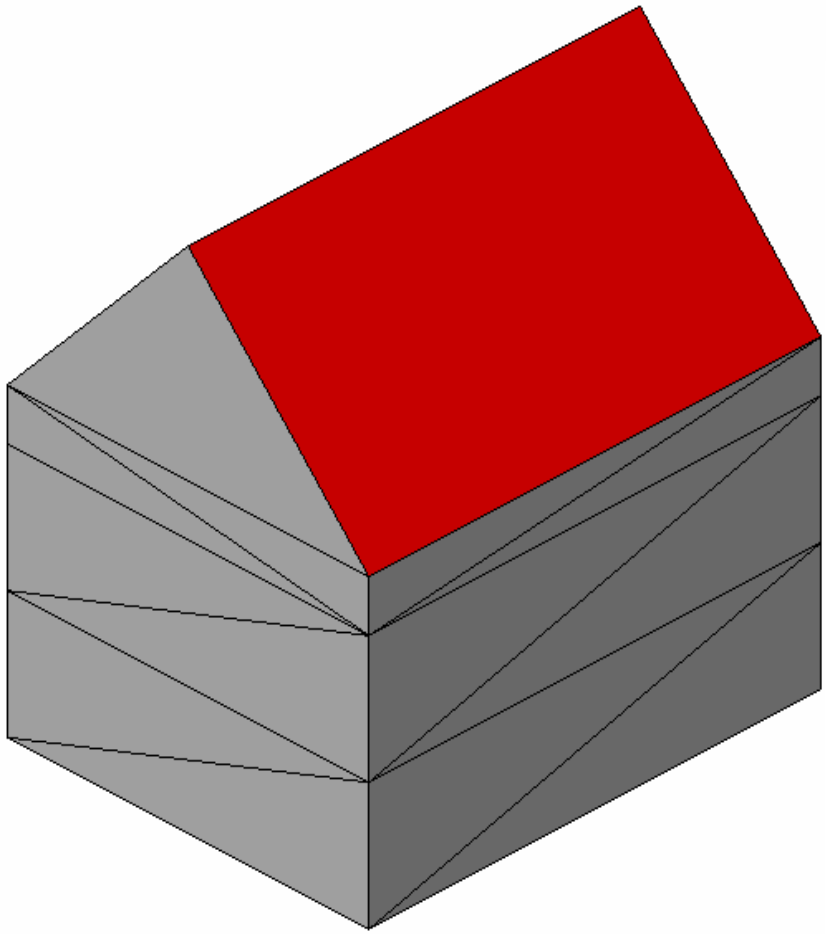
IFC Model



Modeling: Modeling of Storeys?



Geometry not divided into storeys



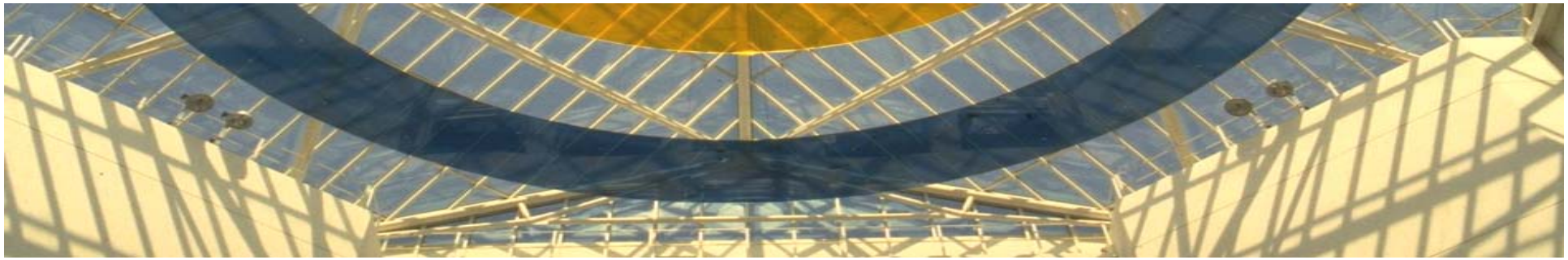
Geometry divided into storeys

Identified 4 areas of concern / processes

- Change requests to CityGML v1.0
- Coordination of ADEs
- Modelling guide
- Data quality / conformance testing

Motions to the TC

- none



COST Action TU0801

Semantic Enrichment of 3D City Models for Sustainable Urban Development

Kick-off Meeting
5 November 2008

Claudine Métral

UNIVERSITÉ DE GENÈVE

Background

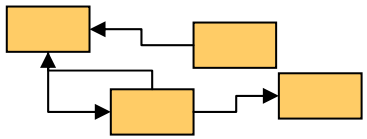
- **Sustainable development of cities**
  Implies investigating cities in a holistic way taking into account many **interrelations** between various urban or environmental issues, such as **spatial planning, traffic and transport, energy, air quality and health, risks, cultural heritage**
- **3D modelling**
  As a possible axis of integration of the **knowledge** related to these issues and as a powerful basis for **interactive exploration**
- **Which models?**
  City scale: 3D city models and **CityGML** as new standard
  Beyond mere 3D visualizations -> need of **semantics** within these models

Main Objective of the Action

Semantically enrich 3D city models
with urban knowledge and models,
so as to extend their functionality
and usability
in a perspective of sustainability

Main Objective of the Action

Transportation issues



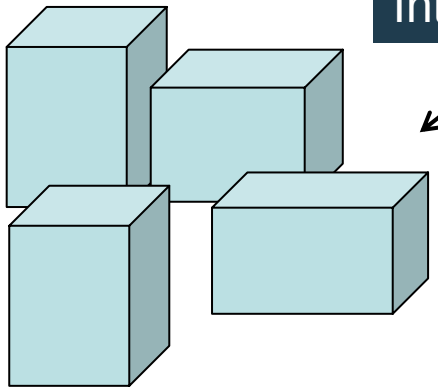
Air quality model

$$\beta_m = \int_L F_m \, dx,$$

$$\beta_t = \int_L F_t \, dx.$$

Integration

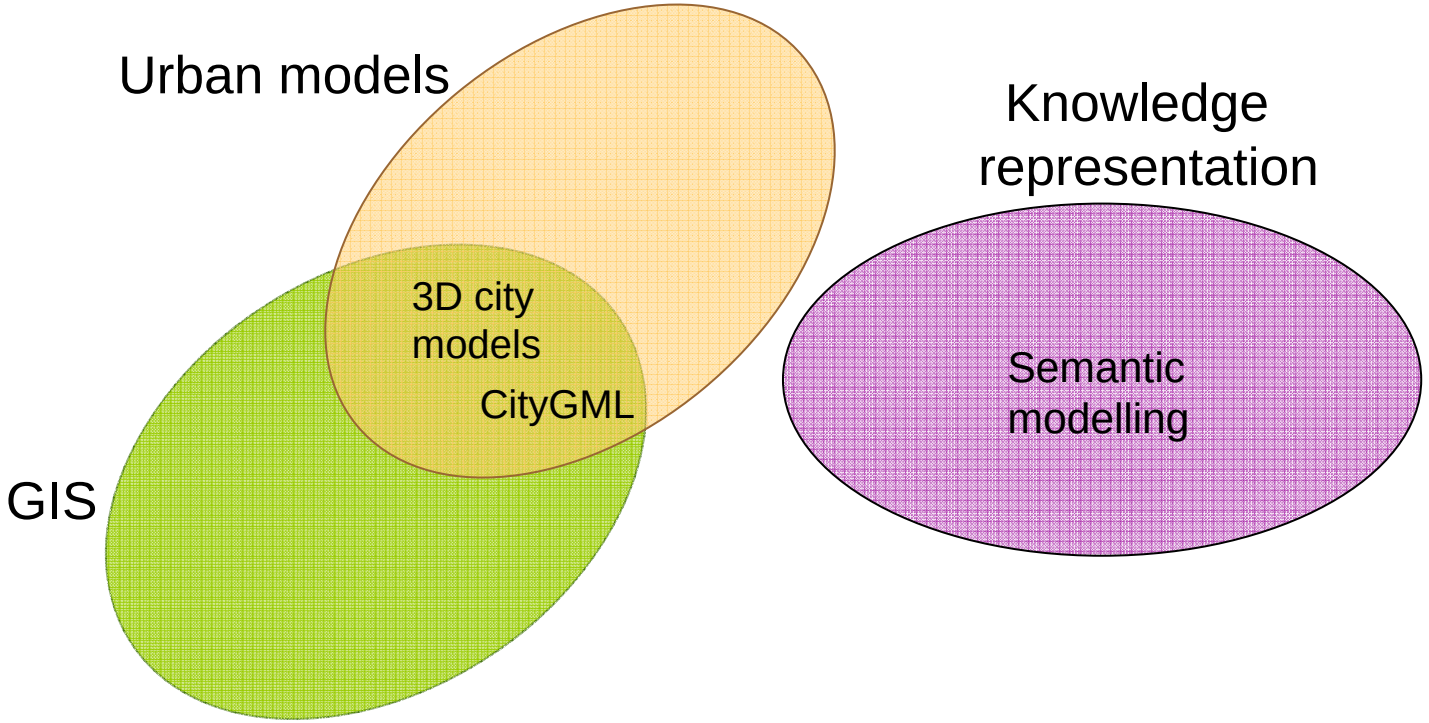
Interconnection



Semantically enriched 3d city model

Innovation of the Action

- Use of **knowledge representation** techniques such as **ontologies** to integrate or interconnect urban data and models with 3D city models



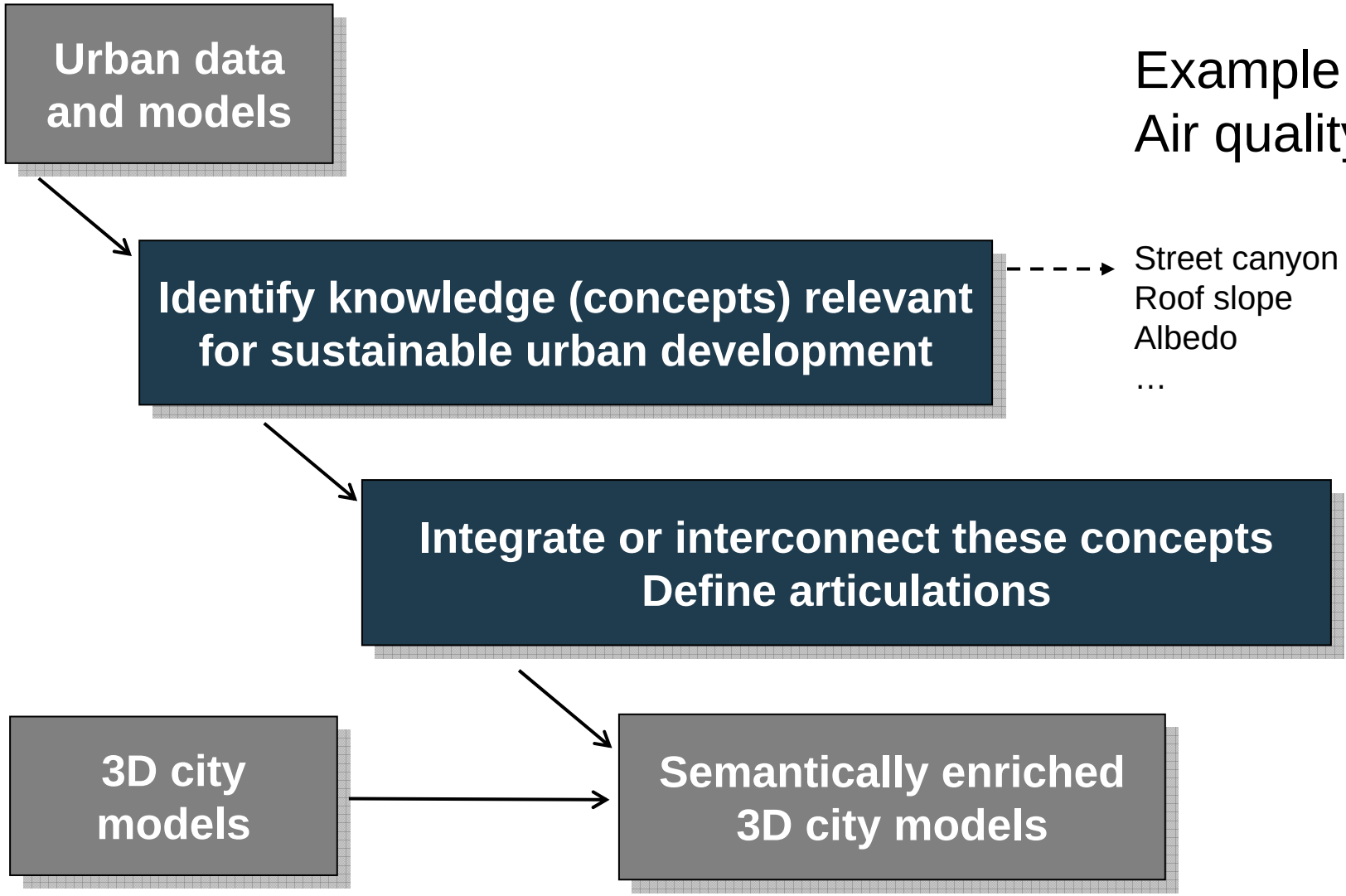
Secondary Objectives of the Action

- **Assessing the usability** of enriched 3D city models, relatively to various urban issues
- **Promoting the creation and use** of enriched 3D city models, especially for new Eastern EU members where such models can presently be hardly found
- Providing a **contribution towards European standards** relative to 3D city models
- **Adding value** to current 3D city models through their ontological enrichment

Secondary Objectives of the Action

- Providing a **methodology for creating and maintaining** enriched 3D city models
- Improving the **consistency** of high-accuracy, domain-oriented detailed models with 3D city models, and ensure their **interoperability** with related, existing, description frameworks or experiments (HEREIN for instance)
- Producing **recommendations for future, funded research** focused on more specific issues of urban modeling using simulation models
- Developing a **network of cities** interested in 3D city models, in Europe and in other parts of the world.

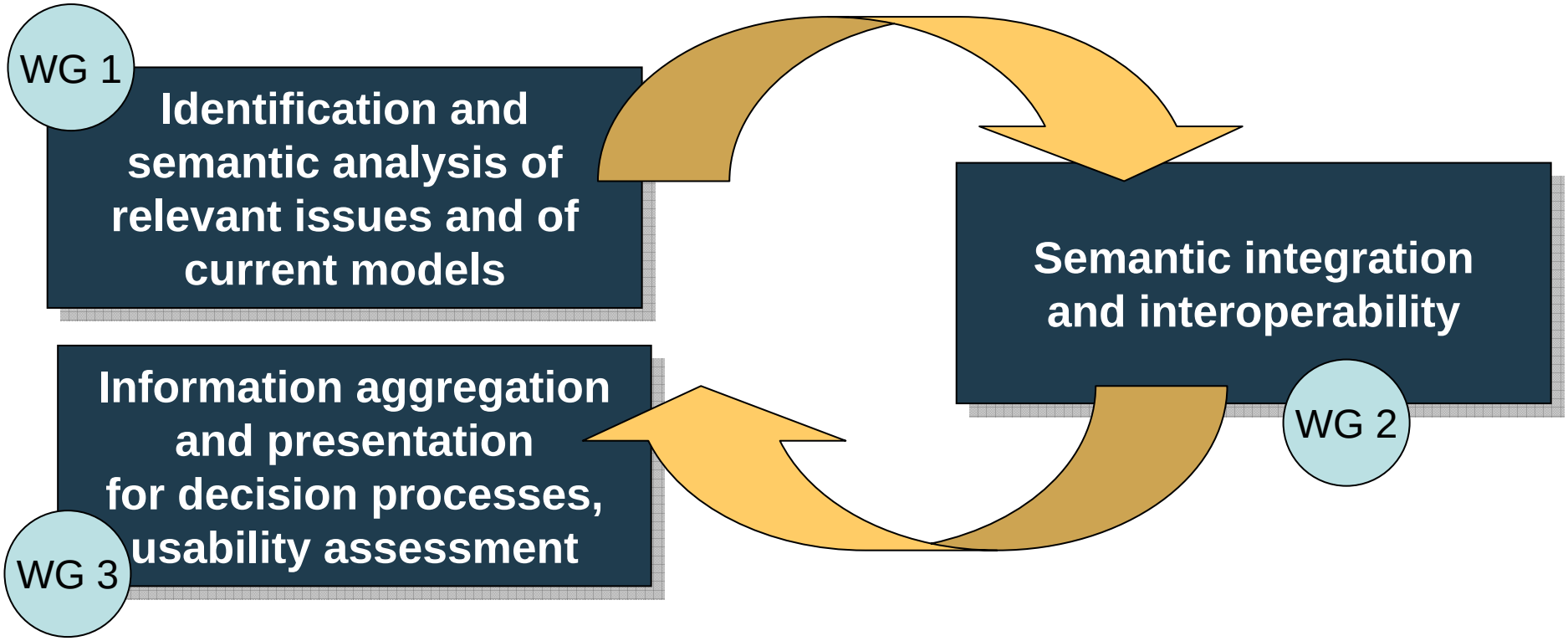
Methodology



Scientific Programme

- Inventory
- Setting in prospect relevant urban issues with 3D city models and urban ontologies
- Selection and analysis of environmental or urban models
- Case study selection
- Semantic integration and interoperability
- Information aggregation and presentation, usability assessment
- Extendibility to non European case studies
- Synthesis of the contributions and definition of future priorities
- Reporting, publication and dissemination

Working Groups



Working Group 1

- **Main purpose**
  Integration and interoperability issues when combining semantic information and models with 3D city models
- **Composition**
  Urban experts such as urban planners, urban geographers, sociologists, environmentalists, and of researchers from the spatial information field
- **Main output**
  A list of potential semantic enrichments of urban models and a list of potential new 3D urban objects

Working Group 2

- **Main purpose**
  Be an exchange and reflection platform about semantic and thematic 3D nature of urban space
  -> Identification and analysis of semantic and modeling issues
- **Composition**
  Researchers in information sciences and representation techniques
- **Main output**
  Recommendations for semantic information integration within 3D urban models

Working Group 3

- **Main purpose**
  Address the stakes of information integration into decision processes to support urban development and sustainability
- **Composition**
  Members of WG1 and WG2, end-users of 3D city models and urban data producers and managers (e.g. from NMA)
- **Main output**
  Detailed analysis of users needs and usability assessment of WG1 and WG2 outputs

Dissemination and valorisation

- **Various media and means**

  Electronic means (public web site)

  Publications (reports, recommendations, guidelines, articles)

  Conferences and proceedings

  Links with non-European organizations or research programs

- **Particularly**

  Use the **European networks** associated to the project for dissemination of results to a wide and various audience

  Use **virtual reality systems** (available in the network of partners) to achieve a more effective exploration and communication of 3D models and results

Valorisation

- **Showcases and demonstrations**

  To urge **local governments** to adopt the proposed methods and standards for more complexity-aware decision-making

- **Education and training**

  Intended

  For **users** of the provided infrastructure
  But also for future **specialists** of enriched 3D city models

  Performed

  Locally, in different cities
  By **distance e-learning**,
  especially with UNIGIS and Eduserv

Web site

- **Web site**
  Public website with general information of the Action
- **Wiki**
  Password protected
  Purpose: for allowing the submission and retrieval of both the input data and the on going products for the usability assessment testsAudience: scientists participating in the COST Action and urban geomatic services, NMA or modelers who will contribute with data or models and participate to the assessment process

Timetable

Milestones	Year 1		Year 2		Year 3		Year 4	
First Phase *Setting in prospect current 3D city models with major urban issues* *Identification of semantic needs*								
Second Phase *Semantic integration and interoperability*								
Third Phase *Synthesis* *Dissemination* *Definition of future priorities*								
MCs	X	X	X	X	X	X	X	X
WGs	X	X	X	X	X	X	X	X
STSMs		X	X	X	X	X	X	X
Conferences			X_{IC}			X_{IC}		X_{FC}
Reporting Publications Dissemination		X_{SAR}			X_{PR}			X_{FR}

SAR = state-of-the-art report; **PR** = preliminary report; **FR** = final report; **IC** = interim conference; **FC** = final conference

Conferences

- **First conference**
  Focus: setting in prospect current 3D city models with major urban issues so as identifying precisely the semantic lacks of current models
- **Second conference**
  Focus on the semantic aspects and on the most powerful way to perform the semantic enrichment of current models
- **Final conference**
  Focus on the usability and gain in value of semantically enriched 3D city models in a sustainable perspective

Agenda

- **Next meeting**
  MC + WGs
  Place:
  Date: April 2009

Budget Plan

- **Year 1**

  Creation and maintenance of the Web site
  2 MCs
  1-2 WGs
  2-3 STSMs

Neuer Arbeitskreis „3D-Stadtmodelle“

Gemeinsamer Arbeitskreis der

- Deutschen Gesellschaft für Photogrammetrie, Fernerkundung und Geoinformation
- Deutschen Gesellschaft für Kartographie

Gegründet am 6. 3. 2009 in Hamburg

Offizielle Vorstellung im Rahmen der Jahrestagung und 100-Jahr-Feier der DGPF am 24.-26. 3. in Jena

Themen:	Anwendungen	Erfassungsmethoden
	3D-Kartographie	Qualitätsmanagement
	Vertrieb	Datenintegration