INGeoForum e.V.
Open Geospatial Consortium

at

Fraunhofer Institut
for Computer Graphics
in Darmstadt

3D-geodata infrastructure in the city of coburg -

Origin process und **vision**

29. September 2009

Requirements towards OGC Standards for 3D geospatial data infrastructure –
perspectives from application domains

Accruement phase I - 1

- start phase I ca. 1997
- 3D is „nice to have“!
  - ignorance – preconception?
- architecture with CAD in 3D
  - very economical handling
  - primarily for the own control of planning

Accruement phase I - 2

- presentation before committees
  - several objects, solely for the examination without context – intention „urban development effect“
    - example: Quellen\Massenmodell HB.avi
    - example: location „Reithalle Coburg“

- data-infrastructure
  - CAD-oriented, file based

Accruement phase II - 1

- start Phase II ca. 2003
  - development of the geo-informationsystem
    - building up of geo specialist data
    - thematic maps and data

      maps with standard ground values

      land register for monuments and ancient buildings

      redevelopment areas

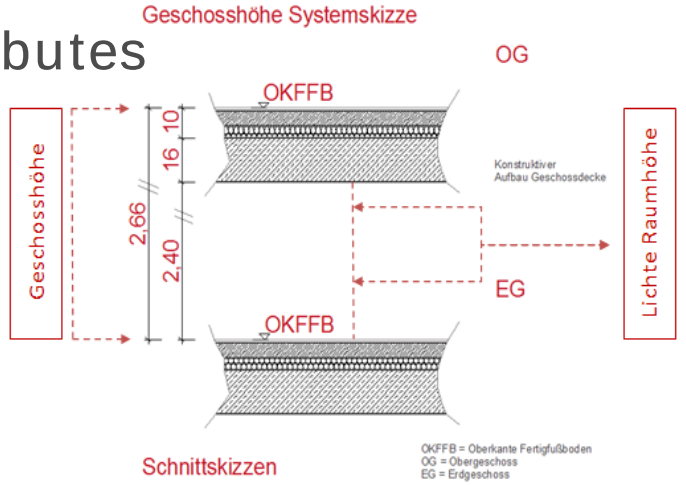
      urban land use planning etc.

Accruement phase II - 2

- parallel to the 2D-evolution of geoinformation and system – desire for 3D-modeling in the context!
  - committees and politicians are interested in suitable tools
  - politicians formulates requirements
  - planners and architects are increasingly focusing on three-dimensional information
  - demand for comprehensible information and contents

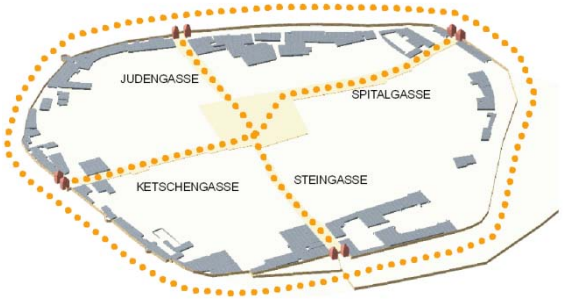
Accruement phase III - 1

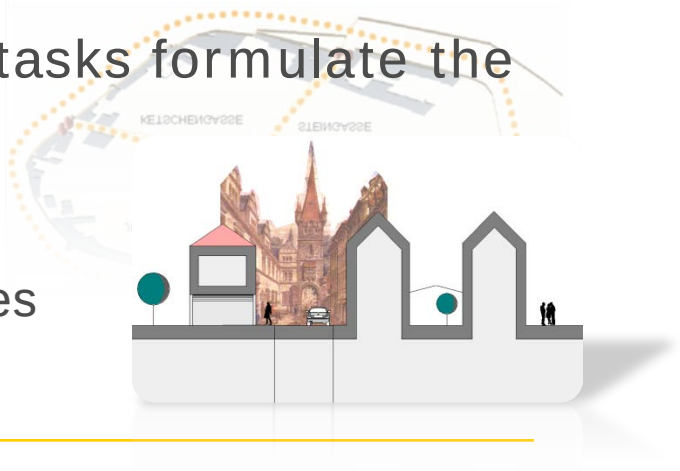
- start phase III ca. 2005
- basic approaches for deriving in the 3. dimension
  - buildings and terrain
  - digital cadastral map and their attributes
    - z-values and styles of roofs
    - heights between floors
    - number of floors



Accruement phase III - 2

- definition of spatial regions with particular relevance of planning
  - historical areas of a city
  - redevelopment areas
  - development areas
- public and organizations with service tasks formulate the demand
  - business development corporation
  - housing societies and planning agencies
  - citizens





Accruement phase III - 3

- formulation of scenarios
  - assessment of urban planning scenarios
  - supporting of marketing tasks
  - presentation of landmarks for tourism
- formulation of a suitable methode for the creation of a comprehensive model in 3D
  - analysis of the own database
  - creation method
  - analysis of the availability and efficiency of the nessesary resources

Accruement phase IV - 1

- phase IV development of the 3D-citymodel Coburg
  - development and contents
    - extent
    - level of details
    - components
    - method
  - data-infrastructure
    - data management and workflow
    - sizes and tools

Use and employment - 1

- operational scenarios
  - urban development
    - simulations in sensitive planning regions within urban land-use planning
    - simulations within the scope of a petition for a referendum and public participation
  - transfer of data to planners and organizations
    - data management and workflow
    - sizes and tools

Use and employment - 2

- operational scenarios
  - urban development

Use and employment - 3

- experience and resume
  - suitability for communal environment
    - management tool – range of mission
    - political decision support
    - figurehead for innovation
    - product of the complete datapool 2D + 3D
    - rediscovery of known viewing habits
    - acceptance of new qualities

Use and employment - 4

- experience and resume
  - improvement approaches
    - administration, from desktop workplace to web-interface
    - expansion of the object model

      the building is the data center

      field part– owner– details of the building...

      are displayed on the object!

    - connection between 2D and3D-data management ...ID
    - selection from basic interface in 3D

Vision - 1

- operational scenarios
  - public
    - citizens
    - lobbies
  - administration
    - informative
    - active modifying and newly generating

Objekt = ‚C0_092188_Steingasse18‘

Vision - 2

- internal structure
  - availibility
    - internal and external web-application
  - architecture
    - data management

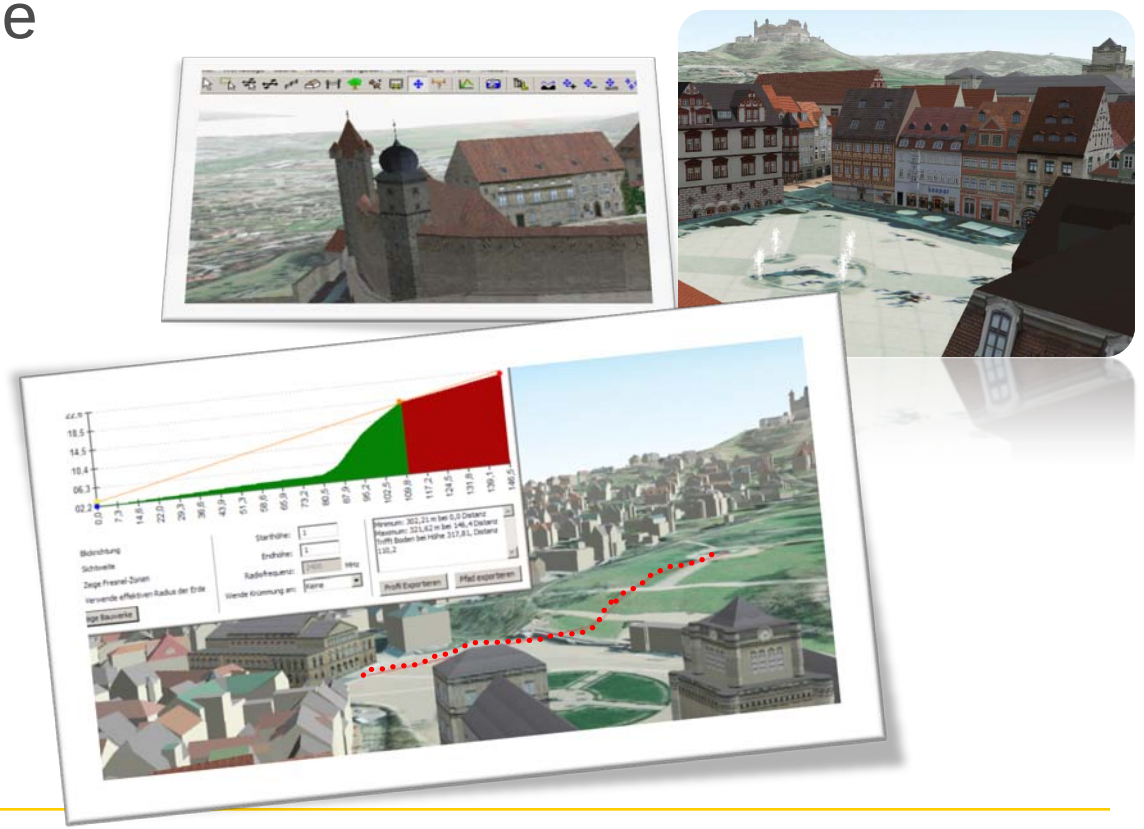
      distributed data sources

      2D and 3D-data
    - administration

      No redundancies!

Vision - 3

- internal structure
  - architecture
    - application
    - pesentation
    - analysis



Vision - 4

- efficiency and cost effectiveness
  - use of standards
    - continued development of CityGML and IFC

      modeling of architecture models and integration
    - avoidance of propritary intermediate formats
    - reduction of conversions
  - cost reduction
    - continuous architecture from data management to presentation and data transfer

Vision - 5

- efficiency and cost effectiveness
  - model for the transfer of data under use of a 3D-application
    - flowback for allocation and services
    - billing per object
  - integration of external modeling
    - modeling of buildings by interested citizens

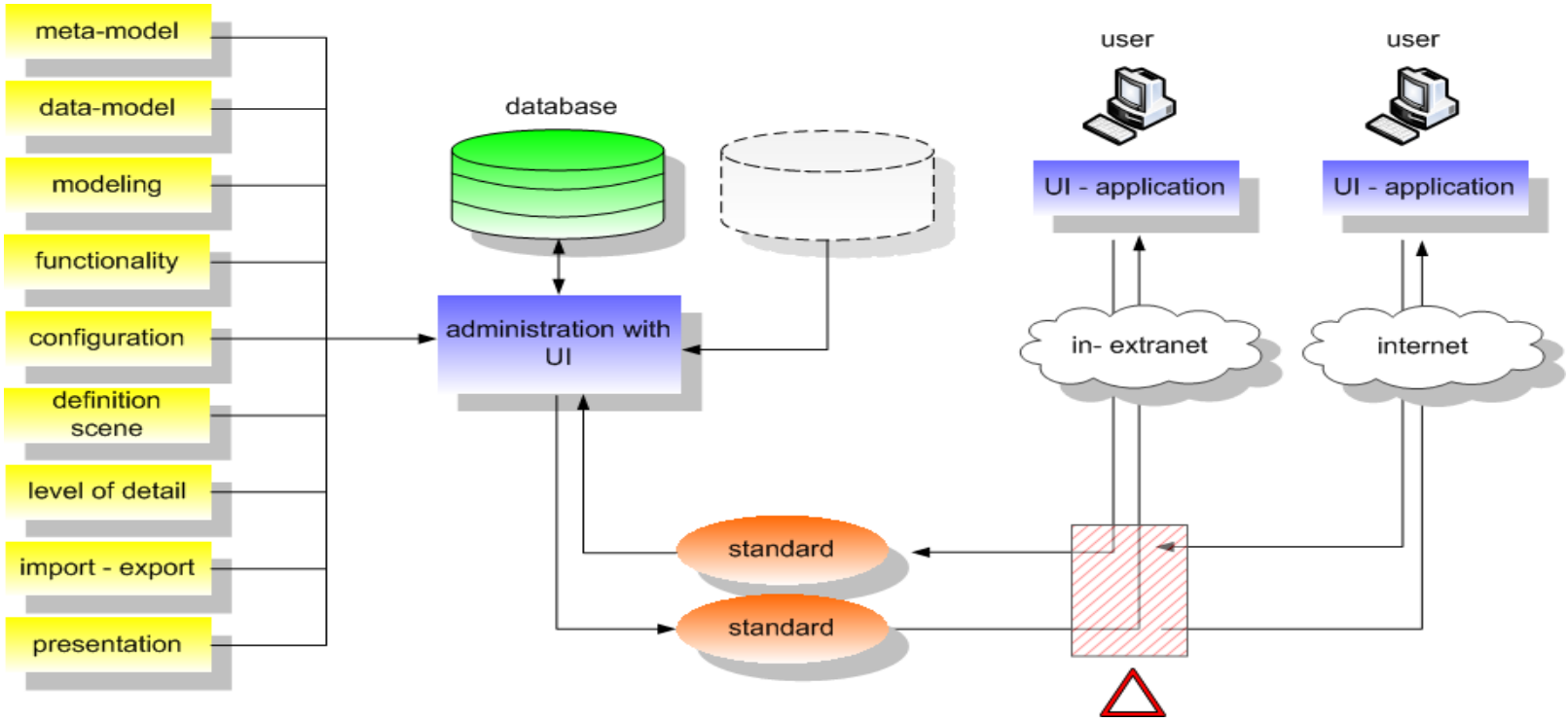
      buildings and topics about use respectively

Vision - 6

- appeal to a public participation
  - historical building information
    - private owners integrate their own models
  - historical building development
    - time periods of an object represented in detail-levels
  - sector development – historical sequences
    - urban quarters to the foundation of a city
    - archaeological reference and features

Vision - 7

- desired flowchart, 3D-architecture in Coburg



3D citymodel Coburg