



**18<sup>th</sup> International Conference on Urban  
Planning and Regional Development in the  
Information Society GeoMultimedia 2013**

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**Slides source: Courtesy of AEW,UWE, FH-IGD & AIT**

# urbanAPI Consortium

**ICT Partners:** Fraunhofer IGD, AIT and GeoVille

→ development of the method and tools

**Urban Sustainable Development and Stakeholder Engagement Partners:**  
UWE and AEW + Stakeholder Board

→ requirements, testing and specifications in respect of urban governance and policy modelling

**City Partners:**

- **Bologna** (Italy)
- **Ruse, ASDE** (Bulgaria)
- **Vienna** (Austria)
- **Vitoria-Gasteiz, CEA** (Spain)

→ testing and evaluation of the urbanAPI tools





## urbanAPI at a glance

Full title	Interactive Analysis, Simulation and Visualisation Tools for Urban Agile Policy Implementation
Duration	36 Months 1 <sup>st</sup> September 2011 – 31 <sup>st</sup> August 2014
Funded	<b>ICT Call 7</b> , FP7-ICT-2011-7, STREP <i>Objective ICT-2011-5.6</i> <i>ICT solutions for governance and policy modelling</i>
Consortium	9 partners (Coordinator Fraunhofer IGD)

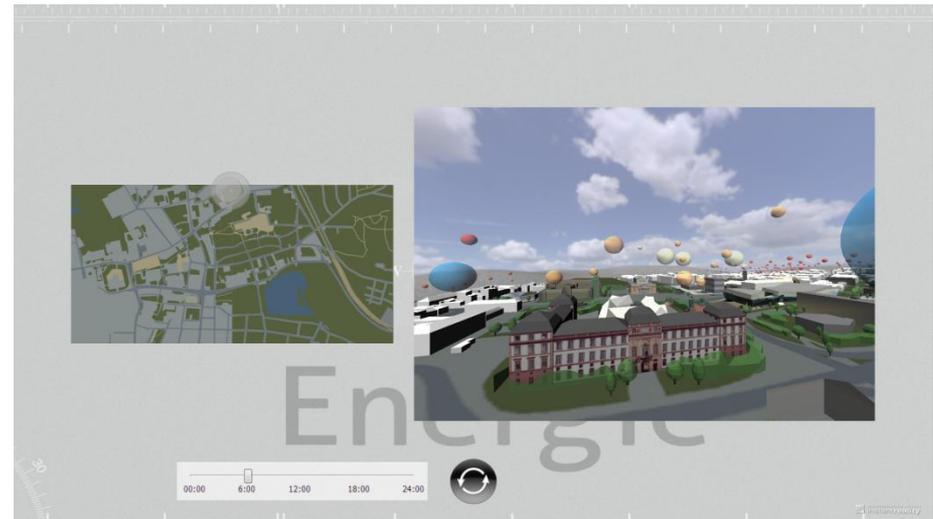
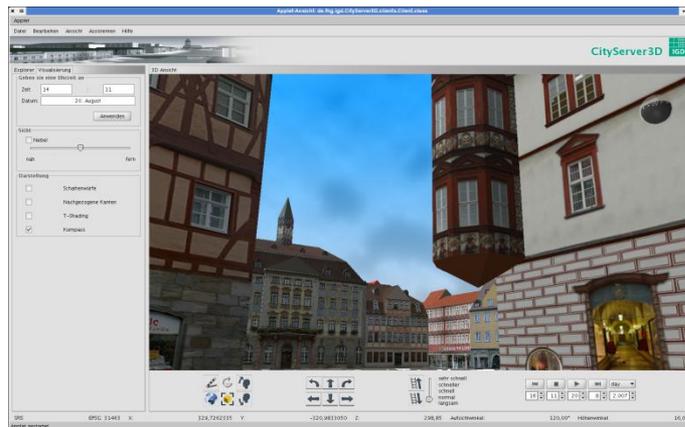
# Project aim

- enable **assessment of urban complexity** - provide planners with information needed to understand socio-economic and environmental impacts of territorial development
- offer **decision-making support** - provide planners with tools and intelligence needed to choose between alternative options for territorial development
- secure **effective engagement with the citizen** – as well as support wider stakeholder engagement on future development of the territory
- create conditions in which **both political mandate and more effective management** is secured – both essential for sustainable urban development



# Main results expected

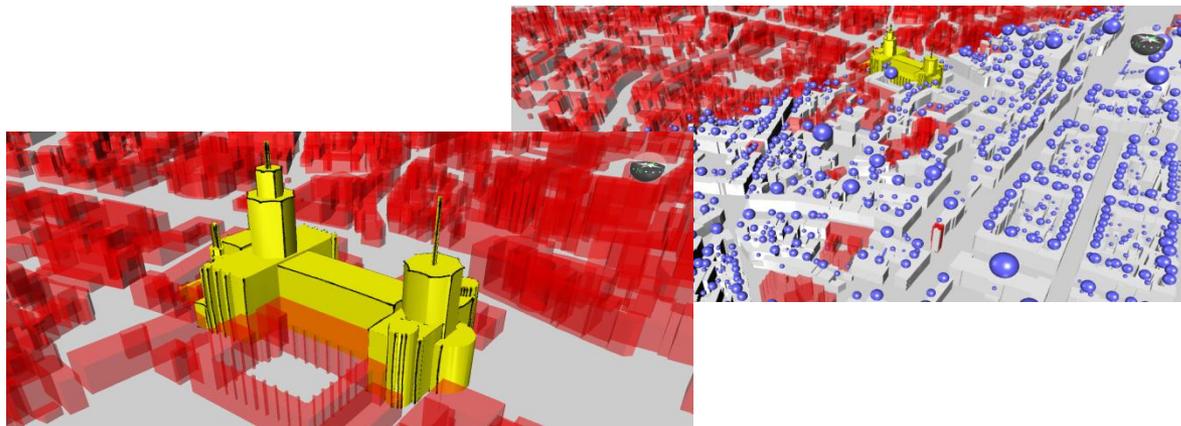
- **urbanAPI toolset**, that allows the fast development and deployment of participative **policy support applications** for decision support, conflict management, analysis and visualisation.
- Adapted **urban planning applications**, that are created, deployed, evaluated and used to support policy makers, planners and stakeholders at **different governance and spatial levels** (urban quarter level, municipal level, urban region level)



# The urbanAPI ICT approach

Two perspectives:

- The toolset to be developed will support a range of activities that are **typical for policy making processes** in the area of urban planning:  
 → issue identification, policy analysis, consultation, coordination, decision, implementation and evaluation.
- The developed toolset will be **generic and be reusable**  
 → sustainability of the approach, as the created solutions will be applicable beyond the application cases used for evaluation



## 3 spatial scales – 3 scenarios

- Urban quarters, addressing issues concerning the **neighbourhood level**
  - **3D Virtual Reality**: *directly addressing the issue of stakeholder engagement in the planning process*
- Urban core, addressing the **citywide level**
  - **Public Motion Exploration**: *developing mobile (GSM) based applications that permit the analysis and visual representation of socio-economic activity across the city*
- **City regions** focused on all spatial and functional relationships, addressing the entire planning region
  - **Urban Growth Simulation**

# Application scenarios

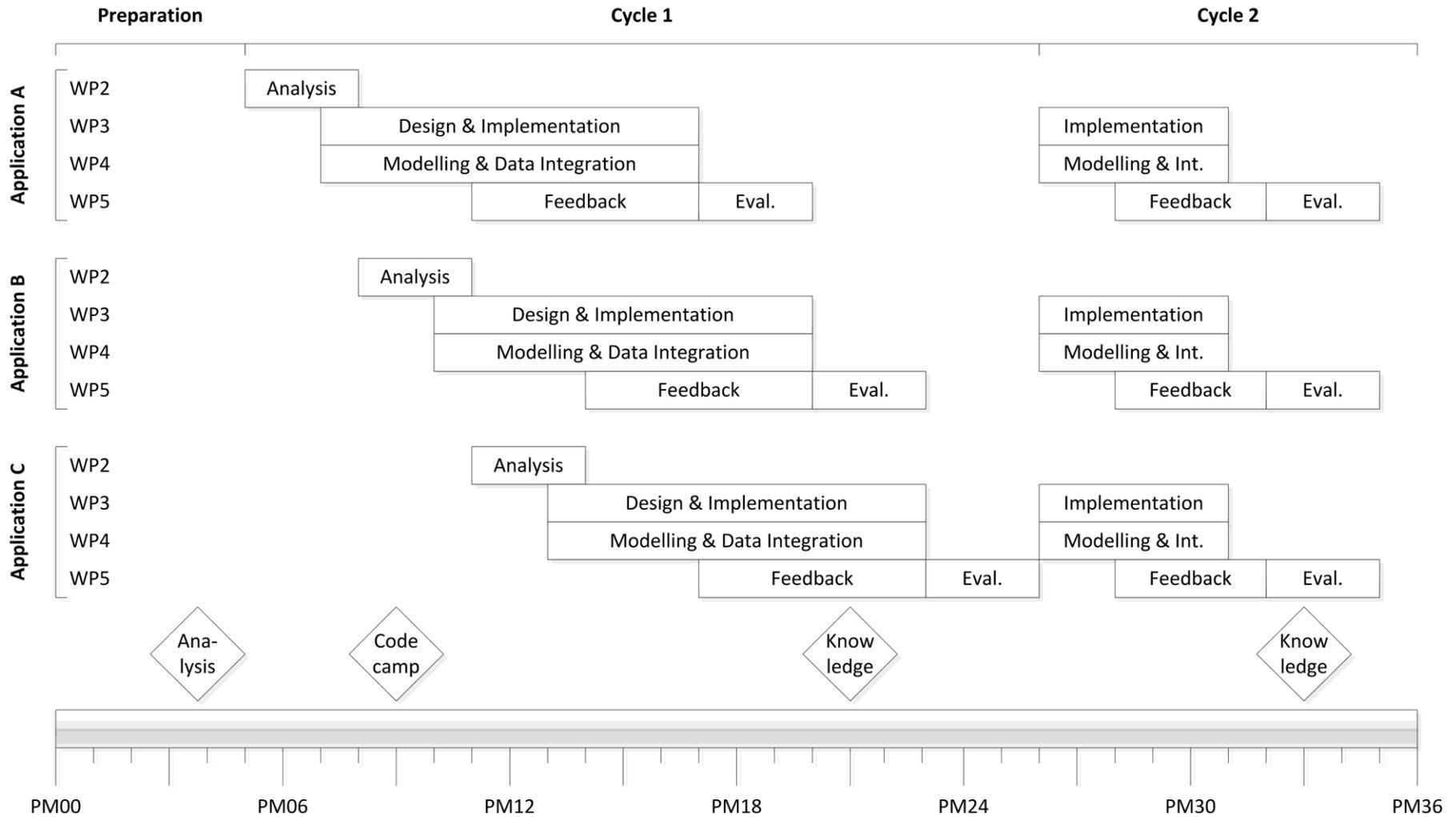
Application cities: **Vienna, Ruse, Vitoria-Gasteiz, Bologna**

- Combination of applications in different cities with different socio-economic, environmental and territorial characteristics, governance structures and practices

	3D	GSM	UGS
Bologna	X	X	
Ruse			X
Vitoria-Gasteiz	X	X	
Vienna	X	X	

- Comparative assessment
  - Conclusions and lessons learnt
  - Basis for the future development of generic ICT tools for other European cities

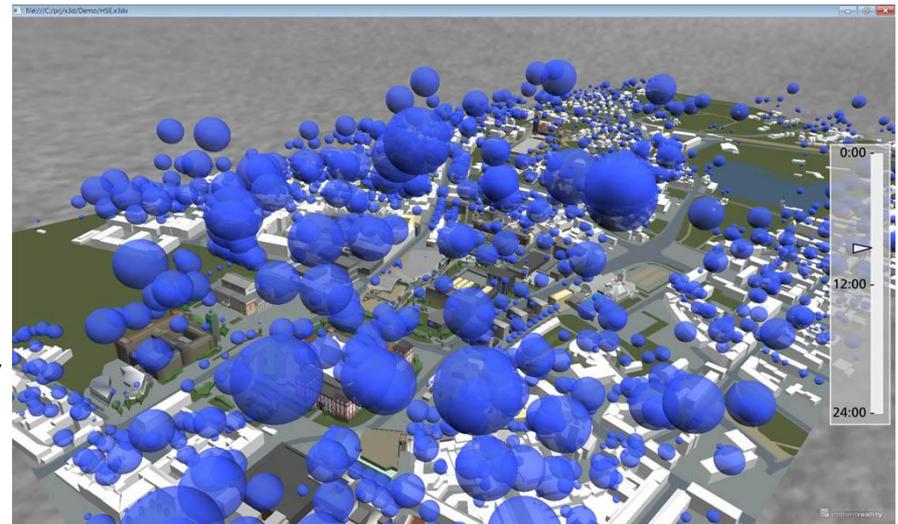
# Cycles of application development and evaluation



# 3D Virtual Reality Application

At neighbourhood scale: creative participatory urban planning using a 3D scenario creator

- **Maps** – as 2D-visualizations of proposed changes in an urban environment – are often judged as **too abstract**
- **3D scenarios** will **support the negotiation process** for urban development projects via virtual reality
- For this scenario, the **3D web client** as well as the **mobile app client** will be used.



Real-time energy consumption



- **interactive viewer**
  - Navigation
  - inserting additional 3D-Data from architects
  - reshaping (move, rotate, extend, trim)
  - visibility and shadow-analysis
  - measuring
- **fully compatible** with existing CityGrid **3D-DB**

# UrbanAPI - 3D-Application

3D VR application will help us to:

- **visualize** urban transformations
- improve interdepartmental **collaboration** and **coordination** in decision-making
- take account of citizens' opinions and suggestions, in line with the **community participation** processes which are involving the San Vitale District

## AMBIENTE VITALE Project



# The UrbanAPI Project 3D/VR Application for the City of Bologna

## MAIN GOALS

- Visualize urban transformations on neighborhood scale
- Enable public participation and feedback

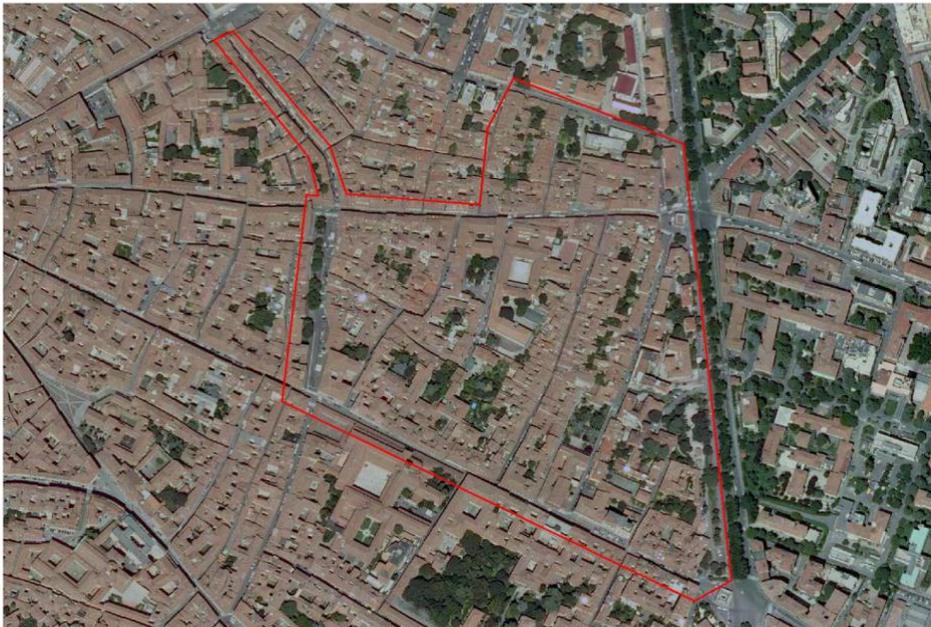
Citizens



Urban and Mobility Planners  
Decision Makers



## State of the Art



San Vitale district – Selected area – Orthophoto and map combined shapefile with mobility routes

- ✓ Analysis of the available datasets
- ✓ Dataset assemblage
- ✓ Creation and translation of metadata files
- ✓ Final upload
- ✓ Finalisation and visual analysis

## 3D Application Scenarios



Street furniture and greening



Cycle and Bus Tracks

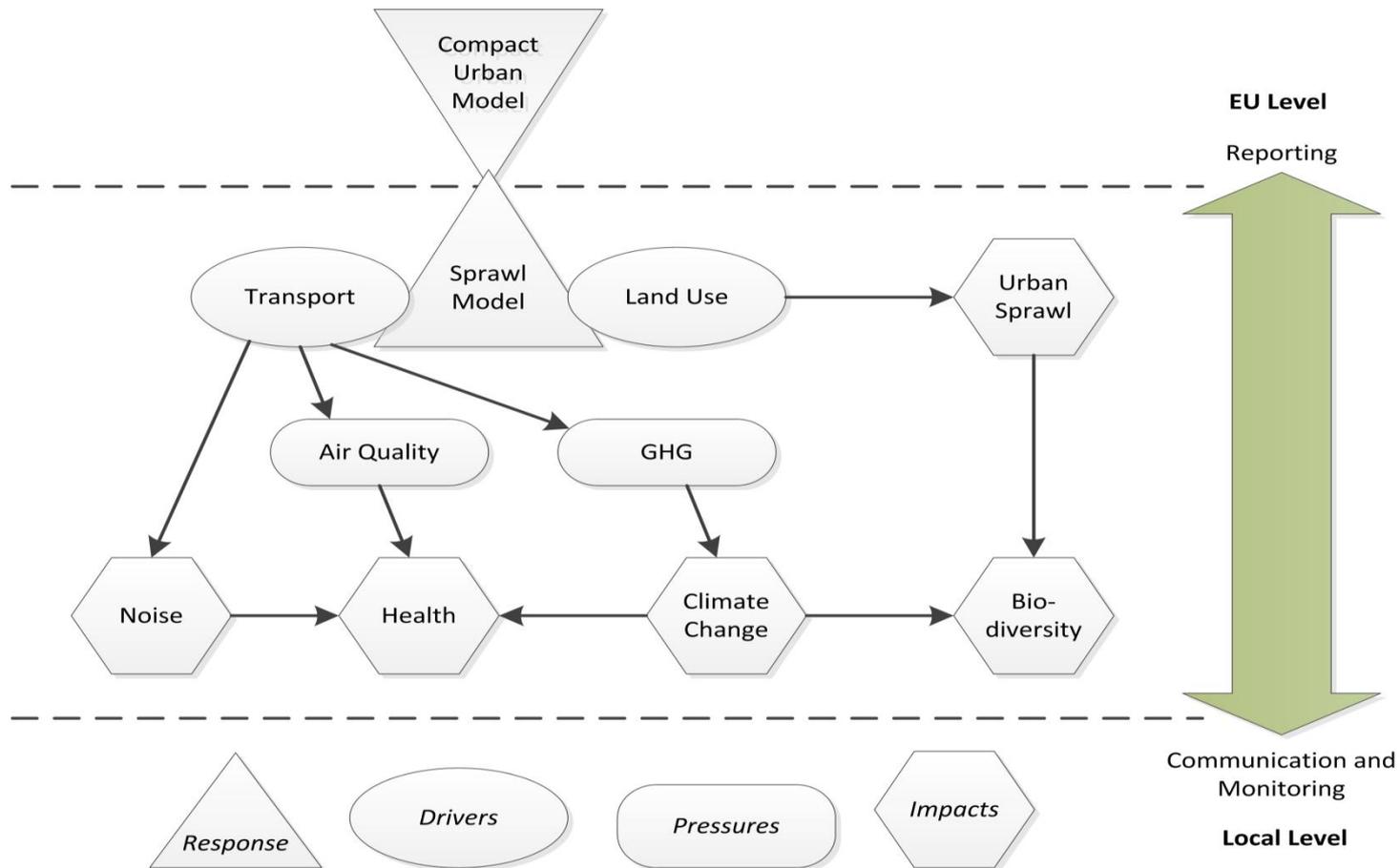


Environment

# Urban governance and stakeholders

- new models of governance and management require greater stakeholder engagement, partnership between stakeholders, and integration of information and analysis (cross departmental/multi-scalar)
- focus on management of urban complexity, including management of the peri-urban (interface urban and rural), where urban challenges include containment of urban sprawl and the creation of the compact city

# urban complexity + integrated urban governance



# urbanAPI solutions



- lessons derived from comparative assessment of the applications developed in **differing contexts** – Ruse and also Vienna, Bologna, and Vitoria-Gasteiz
- therefore specific solutions - **but also commonalities**
- global and pan-European **drivers of change** shaping development of European cities - to which management of urban areas must respond
- **common problems = common solutions = common product** solutions provide basis for **generic ICT tools** for 587 cities of Europe with populations 100,000+ supporting integrated urban management

# Some questions – going forward

- How to manage urban change – growth and decline?
- How to embed in top down and bottom up development process?
- How to develop future visions for urban governance?
- What are cities experiences with ICT tools in urban planning?
- How to apply project outcomes to cities across Europe?
- How to develop business models supporting widespread uptake?

# Thank you!

[www.urbanapi.eu](http://www.urbanapi.eu)