



Notes from the urbanAPI project

Dear Reader

The project urbanAPI commenced on September 1, 2011 for a duration of three years. Its main goal is to develop tools for interactive analysis, simulation and visualisation for urban agile policy implementation.

I am delighted to announce that the project has successfully completed its second year and I take this opportunity to highlight the progress and results so far.

urbanAPI has already been presented at numerous conferences and events. Wherever we introduced the project, it found positive resonance. We hope that you will find it interesting as well. Enjoy reading and please do not hesitate to send us your feedback.

Dr. Joachim Rix
Co-ordinator of the urbanAPI Project



urbanAPI in brief

The 7th Framework Programme of the European Commission fosters ICT enabled governance transformation in Europe, funding projects contributing to this objective. urbanAPI - Interactive Analysis, Simulation and Visualisation Tools for Urban Agile Policy Implementation – is one of these projects. Led by Fraunhofer IGD (Germany) and supported by development partners UWE, Bristol (UK), AIT (Austria), GeoVille (Austria) and city partners Vienna (Austria), Bologna (Italy), Ruse (Bulgaria), and Vitoria-Gasteiz (Spain), it is investing €3 million in the development of ICT applications supporting the management of European cities.

urbanAPI provides ICT enabled solutions adapting governance models to deliver more effective decision making, supporting stakeholder engagement and citizen participation, in order to enhance sustainable urban policy development and delivery. The urbanAPI applications can be used for decision support, conflict management, analysis and visualisation and rely on innovative interaction platforms. They support policy makers, planners and stakeholders at different governance and spatial levels – urban quarter level, municipal level, and urban region level. urbanAPI web applications make use of state-of-the-art web technologies such as X3DOM to display 3D contents over the WebGL API.

urbanAPI adopts an agile development methodology with cyclic and multiple tasks running in parallel, developing a toolset that creates advanced ICT-based intelligence in three urban planning contexts:

- The **3D Virtual Reality** (3D VR) application directly addresses the issue of stakeholder engagement in the planning process through the development and provision of enhanced 3D virtual reality visualisations of neighbourhood development proposals.
- The **Public Motion Explorer** (PME) provides mobile phone based ICT solutions that permit the analysis and visual representation of socio-economic activity across cities and in relation to the various land-use elements of the city.
- The **Urban Growth Simulation** (UGS) prototype provides ICT simulation tools for interactive city region development simulation addressing urban growth and densification as a result of planning interventions.

A major added value of the urbanAPI toolset is the ability for these smart applications to support transformational governance, facilitating the shift from a purely top-down planning approach, to one which is fully engaged with bottom-up initiatives supported by public intervention and stakeholder involvement.



Project news

Project status update

While the first project year focused on the requirements collection and the definition of use cases, the second project year aimed at the development of prototype applications for the different city partners.

Prototypes of the 3D Virtual Reality application as well as the Public Motion Explorer have been created for Vienna, Vitoria-Gasteiz and Bologna. The Urban Growth Simulation prototype for the city of Ruse is currently in preparation. For all developments data preparation, harmonisation and integration played an important role, as the quality of the application is to a certain degree dependent on the input data. This task has proven more difficult than expected as the available data are quite heterogeneous, but could be completed successfully by developing specific data migration tools.

These prototypes will now be presented to the users at each of the partner cities in order to collect feedback on the current status of the software. Accordingly a special assessment methodology has been developed to efficiently make use of the feedback. The first presentations have already taken place in Vitoria-Gasteiz, followed by a Stakeholder Board meeting and a consortium meeting and in Bologna (see section below). In the next weeks feedback will be collected from the other city partners, followed by a second development cycle supported by a further evaluation phase.

User evaluation workshop

In the last 2 months workshops have taken place in Vitoria-Gasteiz and Bologna.

In a first session the current progress in tool development was presented and tool training was carried out. The number of participants varied between the 2 cities, drawn from both city planning and transport departments. Some users were officers employed by the city administration, dealing with technical solutions, others occupied management positions unfamiliar with the application of technical tools. This range of expertise was necessary for the purposes of the evaluation, but posed significant challenges in respect of training.

The usability of the different tools varies significantly, and accordingly the training demands are also at different levels. The 3D VR tool allows more tool control, but requires deeper insights and more knowledge of the technical features to be addressed in supporting more active usage e.g. for “flying” through a 3D scene or similar. The PME tool requires fewer skills to view the geospatial data interactively because of smaller number of functions to be selected. The PME tool was simpler to use, even for officers less familiar with mapping applications. The drama of the representation of the socio-economic functioning of the city provided by this tool was fully evident in the “wow-effect” shown by the evaluators when seeing the spatial mobile phone user density variations during the day within the very centre of Bologna.

Stakeholder board meeting and evaluation

The 3rd Stakeholder Board meeting (for details see below) held on the 23rd September in Vitoria-Gasteiz was hosted by the Environmental Studies Centre (CEA). The urbanAPI project consortium including city partners took the opportunity to discuss the project’s progress from the user’s perspective as well as from a technological viewpoint with international stakeholders. Prototype products were presented, followed by a hands-on session using selected scenarios. Based on the results, the evaluation of the prototype products was undertaken by all Stakeholder Board members, followed by discussion on the current status of the products as well as issues concerning further product development.

Consortium meeting

Following the Stakeholder Board meeting, members of the urbanAPI consortium remained in Vitoria-Gasteiz (24 – 25 September) to discuss the status of the project and to plan the next steps. Special emphasis was given to presentation of the current status of the applications to the city partners in order to ensure that the work of the developers is on track.

Furthermore, initial results from the Stakeholder Board meeting were discussed especially regarding the further engagement, dissemination and exploitation of the urbanAPI knowledge and products.

Papers and scientific publications

The following papers and scientific publications were published in the past project year:

Khan, Z., Ludlow, D. and Loibl, W. (2013) *Applying the CoReS requirements development method for building IT tools for urban management systems: The UrbanAPI project*. Theoretical and Empirical Researches in Urban Management, Vol 8, Issue 4, pp. 25-59.

Khan, Z., Ludlow, D., Loibl, W. and Soomro, K. (2013) *ICT enabled participatory urban planning and policy development: The UrbanAPI project*. Transforming Government: People, Process and Policy.

Mauri, M.P., Caranti, C., Ludlow, D. (2013) *Smart Cities and Urban Governance. The urbanAPI project: Bologna case study*. Real Corp Conference – Urban Planning and Regional Development in the Information Society Geomultimedia – Rome.

Peters-Anders, J., Loibl, W., Dambruch, J. (2013) *Urban Motion Exploration applying mobile device location data*. 16. AGILE Conference on Geographic Information Science. Leuven.

Krämer, M., Ludlow, D., Khan, Z. (2013) *Domain-specific languages for agile urban policy modeling*. Proceedings of the 27th European Conference on Modelling and Simulation (ECMS), Policy Modelling Track. Ålesund.

Milenov, K., Nakov, D., Radkov, R. (2013) *An innovation IT solution in support of urban strategy planning*. The Municipality of Ruse – for the purposes of the local mass media and for the Technical University “A.Kantchev”. Ruse.

Milenov, M., Radkov, R. (2013) *The new urban management in support to EU priorities on cohesion and competitiveness*. The Monthly National magazine “Building and the City”. Sofia.

de Santiago, M., Dios, R. (2012) *Aplicación de herramientas basadas en tecnologías de la información y la comunicación en la gestión urbana – Applying ICT based tools to urban management*. 11º Congreso Nacional de Medio Ambiente (CONAMA 2012) – National Conference on Environment.



urbanAPI at conferences and events

We cordially invite you to visit urbanAPI at the following conferences:

- **European Meeting of Cybernetics and Systems Research (EMSCR)** on 22-25 April 2014 in Vienna, Austria
UrbanAPI will be presented during the EMSCR meeting which contributes to a common understanding of the systems sciences in response to the global challenges.
- **CeBIT 2014** on March 10-14, 2014 in Hannover, Germany
CeBIT is the world’s leading IT business event and conference for professionals and a gathering for the top decision-makers in the IT industry, and so an excellent shop window for the presentation of the results of urbanAPI.

- **SmartCity Expo & World Congress** on 19-21 November 2013 in Barcelona, Spain
The SmartCities Expo will discuss how to make Smart Cities smarter, how to innovate for the future and strive for innovative technologies, in which context the added value of urbanAPI will be presented.

You will find further details about our presence at these events on our website www.urbanAPI.eu.

Also we thank all our visitors at past events for their valuable contact and feedback:

- **Smart City Exhibition 2013**
on 16-18 October 2013 in Bologna, Italy
- **INTERGEO 2013**
on 8-10 October 2013 in Essen, Germany
- **WALK21, XIV International Conference on Walking and Liveable Communities**
on 11-13 September 2013 in Munich, Germany
- **INSPIRE Conference 2013**
on 23-27 June 2013 in Florence, Italy
- **18th International Conference on 3D Web Technology**
on 20-22 June 2013 in San Sebastian, Spain
- **27th European Conference on Modelling and Simulation (ECMS)**
on 27-30 May 2013 in Ålesund, Norway
- **REAL CORP 2013 – Planning Times**
on 20-22 May 2013 in Rome, Italy
- **16th AGILE Conference on Geographic Information Science**
on 14-17 May 2013 in Leuven, Belgium
- **HANNOVER MESSE 2013**
on 8-12 April 2013 in Hannover, Germany
- **t-Government Workshop** with eGovPoliNet project
on 22-23 March 2013 in London, UK
- **3D Forum Lindau**
on 19-20 March 2013 in Lindau, Germany



urbanAPI Consortium

The project was initiated by nine partners from six European countries. The partners include representatives from four application cities, two urban planners and policy modellers, and three development groups. The project partners are:

- Fraunhofer Institute for Computer Graphics Research IGD, Germany (Coordinator)
- University of the West of England, UK
- Austrian Institute of Technology GmbH, Austria
- GeoVille GmbH, Austria
- AEW srl, Italy
- City of Bologna (COBO) – Environment Sector, Italy
- Agency for Sustainable Development and Eurointegration “Ecoregions” – ASDE, Bulgaria
- City of Vienna, Municipal Department 18 – Urban Development and Urban Planning, Austria
- Environmental Studies Centre (CEA), City of Vitoria-Gasteiz, Spain

Learn more about urbanAPI by visiting our website www.urbanapi.eu.



Contact

urbanAPI Project Office

zeitform Internet Dienste OHG
Fraunhoferstraße 5
64283 Darmstadt
Germany
Phone: +49 6151 155 637
E-Mail: po@urbanapi.eu

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Responsible editor: [Dr. Joachim Rix](#)

urbanAPI Consortium

c/o Fraunhofer Institute for Computer Graphics Research IGD
Department Spatial Information Management
Dr. Joachim Rix
Fraunhoferstraße 5
D-64283 Darmstadt, Germany
Phone: +49 6151 155 420
Email: coordinator@urbanapi.eu