Notes from the urbanAPI project

Dear Reader

The project urbanAPI commenced on September 1, 2011 for the 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 first but intensive year and I take the 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 AIT (Austria) and Geoville (Austria), policy partners University of the West of England (UK) and AEW (Italy), and cities Vienna, Bologna, Ruse, and Victoria-Gasteiz, 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 Neighbourhood API 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 City API 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 Region API provides ICT simulation tools for interactive city region development simulation addressing urban growth and densification with 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

User workshops: requirements gathered and analysed

User requirements provide the basis for the design and implementation of the urbanAPI ICT tool set. To gather the requirements, the consortium decided to perform two strands of user workshops in different European cities. The first strand of analysis workshops aimed at acquiring, sharing and comparing city experiences and policy information needs and helped to understand the user needs and define the requirements for the selected applications.

The first two requirements and analysis workshops took place right after the project start, in Vienna, Austria and in Bologna, Italy. Both workshops are part of the first strand of specialised internal workshops. Workshops in Vitoria-Gasteiz, Spain and in Sofia, Bulgaria followed later to build on the experiences of the first round. In February, 2013, a special workshop on urban growth simulation was organized in Ruse, Bulgaria. The outcomes of the requirement workshops served as basis to develop application scenarios for each of the cities to develop the urbanAPI tool set. The application scenarios refer to urban planning issues, which are described in the report on user requirements. This report will soon be available for download at the urbanAPI website.

The second strand of workshops will focus on knowledge transfer aspects, which include user manuals, wikis and screen recordings explaining the functionality of ICT tools to be used for internal knowledge transfer sessions. These workshops are planned in the second part of the project.

Scenarios for the user community

The urbanAPI development team started to prepare, harmonise and integrate the data sets of the participating cities. The researchers used the pre-existing prototypes brought into the project by the partners and realised two early demonstrators. The first demonstrator introduces the urban planning application in Vitoria Gasteiz, Spain, using a 3D scenario creator. This advanced interactive 3D web application enables public participation in urban planning, supports collaboration among different stakeholder groups in the city and can be used for visual analysis and presentation of planned actions.

The second demonstrator presents the Public Motion Explorer on the example of Vienna. The Public Motion Explorer application is an effective tool to test alternative mobility proposals for the city centre including the pedestrianisation of certain localities. The application determines, for example, the attractiveness of areas by the time people spend there and the number of people using that area at specific times and seasons. In addition, socio-economic and demographic characteristics can be interpolated with GSM data, including information about the substantial student population of the city and their use of the city centre.

The third application concerning the urban growth simulation has started to be applied now in Ruse in Bulgaria located at the Danube along the border with Romania. Further scenarios for all applications involving the other urbanAPI cities will be developed step by step during the second and early third year of the project. Following a review and evaluation cycle for each of the scenarios in year two, a second iteration round for updates and improvements, as well as additional functionality according to upcoming requirements will be the main focus of activity during the next project year.

Lessons learnt from the comparative assessment of the applications developed in the differing city contexts will form the basis for the future development of generic ICT tools that can be utilised in the majority of the 500 cities of Europe with populations over 100,000, as well as other smaller cities and towns throughout Europe.

Code Camp 2012 in Darmstadt

The developer team met at the three-day Code Camp in Darmstadt in April 2012 to discuss how to integrate already existing IT developments into the new tools. The code camp was a great success as the developer team had the possibility to involve the city of Vienna to get some deeper insights in their requirements and their ideas about the tools to be developed. The developers also had the opportunity to share their thoughts about the architectural concepts and technologies to be used in

the project. The researchers introduced some tools and elaborated first examples. For the management of requirements, use cases and changes which may arise from the cities during development, the consortium set up a web based project management tool. It is intended to use the tool in the evaluation process as well.

Assessment methodology developed

The urbanAPI team has developed an assessment methodology for feedback evaluation considering user perspectives as well as technical requirements. It will be further detailed and updated during the review cycles. A public report introducing the assessment principles will soon be available for download at the urbanAPI website. In year two the evaluation procedures will be detailed and applied to the scenarios.

Stakeholder board established

urbanAPI has established a Stakeholder Board to obtain further inputs from the community, to ensure evaluation and feedback on project developments and to support the dissemination of the results via the user communities. We invited international domain experts to participate in the project activities with their expertise and advice. We would like to welcome following members of the Stakeholder Board and thank them for their commitment.

- Stefan Kuhn, ICLEI - Local Governments for Sustainability European Secretariat, Freiburg (Chair of the Stakeholder Board)
- Lewis Dijkstra, DG Regio, Brussels
- Jaume Fons, European Topic Centre – Land-Use Spatial Information (ETC-LUSI), Copenhagen
- Sylvain Haon, POLIS, Brussels
- Carlo Lavalle, DG Joint Research Centre, Ispra
- Pirita Lindholm, Climate Alliance, Brussels
- Gianluca Carlo Misuraca, DG Joint Research Centre, Sevilla
- Angelika Poth-Moegele, Council of European Municipalities and Regions, Brussels
- Yves Punie, DG Joint Research Centre, Sevilla
- Didier Vancutsem, ISOCARP, The Hague

urbanAPI at conferences and events

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

- **3D Forum Lindau** on 19-20 March 2013 in Lindau, Germany
- **t-Government Workshop** with eGovPoliNet project on 22-23 March 2013 in London, UK
- **HANNOVER MESSE 2013** on 8-12 April 2013 in Hannover, Germany
- **6th German GeoForum 2013** of the DDGI on 24-25 April 2013 in Berlin, Germany
- **16th AGILE Conference on Geographic Information Science** on 14-17 May 2013 in Leuven, Belgium
- **REAL CORP 2013 – Planning Times** on 20-22 May 2013 in Rome, Italy
- **27th European Conference on Modelling and Simulation (ECMS)** on 27-30 May 2013 in Ålesund, Norway
- **18th International Conference on 3D Web Technology** on 20-22 June 2013 in San Sebastian, Spain
- **INSPIRE Conference 2013** on 23-27 June 2013 in Florence, Italy
- **INTERGEO 2013** on 8-10 October 2013 in Essen, Germany
- **Smart City Exhibition 2013** on 16-18 October 2013 in Bologna, Italy

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

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

- **CEBIT 2012** on 6-10 March 2012 in Hannover, Germany
- **UK-Ireland Planning Research Conference**, Smart cities session on 13 April 2012 in Brighton, UK

- **t-Government Workshop** with eGovPoliNet project on 9 May 2012, London, UK
- **INSPIRE Conference 2012** on 23-27 June 2012 in Istanbul, Turkey
- **GI-Forum 2012, Symposium and Exhibit – GI Science and Technology** on 4-6.July 2012 in Salzburg, Austria
- **INTERGEO 2012** on 9-11 October 2012 in Hannover, Germany
- **Smart City Exhibition 2012** on 29-31 October 2012 in Bologna, Italy
- **Annual Polis Conference 2012** on 29-30 November 2012 in Perugia, Italy
- **25th Anniversary of Applied Computer Graphics in Darmstadt** on November 2012 in Darmstadt, Germany
- **Workshop 3D Stadtmodelle** on 6-7 November 2012 in Bonn, 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
- AIT - 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) and the city of Ruse, 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 and its partners by visiting our website **www.urbanapi.eu**.

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