

Interoperable Volunteered Geographic Information empowering e-governance processes: Case study for Land Use Dataset in the City of Zagreb

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Extended Abstract

Today, urbanisation is a major change taking place globally. It can be seen as a gift to the human society if it is controlled, coordinated and planned. However this development causes a lot of ecological, economic and social problems (Mohan et al. 2011). Cities are complex, networked and continuously changing social ecosystems, shaped and transformed through the interaction of different interests and ambitions. Ensuring employment, sustainable development, inclusion and quality of life are important concerns. There is no doubt that in these challenges, spatial data plays a crucial role. In order to manage sustainable development and support e-governance processes, integration of spatial data is needed in an efficient way.

Management of spatial data in local administrative units (municipalities and cities) is under the local spatial data infrastructures (LSDI). One of the most important areas of the LSDI is urban planning where Land Cover (LC) and Land Use (LU) are core information layers for a variety of scientific activities as well as administrative tasks.

This work presents the methodology to collect VGI observations for land use areas definition based on the LUCAS fieldwork methodology, and HI-LUCS (Hierarchical INSPIRE Land Use Classification System), and reference topological layer. The practical research work was performed during the GIS summer School in the city of Zagreb (Figure 1) in dual collaboration by Faculty of Geodesy, University of Zagreb and Faculty of Horticulture and Landscape Engineering, Slovak University of Agriculture in Nitra.



Figure 1. Study area - digital orthophoto with surveying zones boundary definition.

The reference spatial data was topographical dataset in national topographic model provided by the city of Zagreb. Mobile GIS devices Trimble Juno 3B were used for the field works. Attributes as HILUCS (Benner et al. 2013) LU and LUCAS LC codes (Gallego et al. 2008) together with cardinal direction photographs were implemented into the data model.

The fieldwork lasted four days and resulted in total number of 1755 observation points collected by six working groups. Point features were collected with the following data type attributes: LU codes defined by HILUCS and optional LC codes defined by LUCAS classification. The results presented provide suitable proposal for fieldworks methodology and updates of a land use database in line with the INSPIRE directive applicable at a LSDI level anywhere.

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